AACT Herbal Dietary Supplements SIG Abstracts September 2019

1. Nutmeg poisoning: Ten years (2008-2018) of experience from the Marseille Poison Control Center. Reynoard J, Torrents R, Domange B, Glaizal M, de Haro L, Simon N.

Presse Med. 2019 Sep 19. pii: S0755-4982(19)30366-5. doi: 10.1016/j.lpm.2019.08.016. [Epub ahead of print]

No abstract

DOI: 10.1016/j.lpm.2019.08.016
PMID: 31543391

2. Nutmeg overdose: Spice not so nice. Beckerman B, Persaud H.

Complement Ther Med. 2019 Oct;46:44-46. doi: 10.1016/j.ctim.2019.07.011. Epub 2019 Jul 19.

BACKGROUND: Nutmeg is a spice common to many kitchens around the world and is being used for many other reasons, such as an aphrodisiac, antimicrobial, antioxidant and analgesic, yet little is known about the toxic effects of nutmeg. CASE REPORT: A case is presented of a young male who took an overdose of nutmeg and presented via ambulance to the Emergency Department with multiple psychiatric and neurological symptoms. The case is described in detail, especially in regard to the prehospital and Emergency Department presentation. Emergency personnel should be aware of nutmeg toxicity due to its ability to mimic many other neurological, cardiac and psychiatric conditions. Therefore, increased awareness of this issue can help minimize the risk of misdiagnosis. The importance of communication between the Emergency personnel and the pre-hospital team is stressed. A discussion is included concerning the pathophysiology of nutmeg toxicity, its history, symptomatology, differential diagnosis and treatment.

DOI: 10.1016/j.ctim.2019.07.011
PMID: 31519286

3. Kratom-Induced Cholestatic Liver Injury Mimicking Anti-Mitochondrial Antibody-Negative Primary Biliary Cholangitis: A Case Report and Review of Literature. Aldyab M, Ells PF, Bui R, Chapman TD, Lee H.

Gastroenterology Res. 2019 Aug;12(4):211-215. doi: 10.14740/gr1204. Epub 2019 Aug 25.

Kratom is an herbal supplement used to relieve chronic pain or opioid withdrawal symptoms. Recent news articles covering adverse effects associated with kratom use have brought attention to its organ toxicities. Reports of kratom-induced hepatic toxicity are limited and only three case reports of kratom-induced liver injury with histopathologic examination of the liver biopsies are available. A 40-year-old female presented with symptoms of mixed cholestatic and hepatocellular liver injury without clear etiology. The laboratory and imaging workup suggested possibilities of autoimmune hepatitis, autoimmune hepatitis-primary biliary cholangitis (PBC) overlap syndrome, or drug-induced liver injury. Autoantibodies including anti-mitochondrial antibody (AMA) were negative. Liver biopsy showed granulomatous hepatitis with prominent duct injury, suggestive of AMA-negative PBC. She subsequently was referred to a hepatologist and a history of recent kratom use was finally revealed. Kratom was discontinued and the symptoms improved. Kratom-induced hepatic toxicity may manifest with variable biochemical and clinical abnormalities. Histologically, it may mimic AMA-negative PBC. Our case highlights the importance of thorough history taking, interdisciplinary approach and communication for optimal patient care.

DOI: 10.14740/gr1204
PMCID: PMC6731044
PMID: 31523332

4. Characteristics of deaths associated with kratom use. Corkery JM, Streete P, Claridge H, Goodair C, Papanti D, Orsolini L, Schifano F, Sikka K, Körber S, Hendricks A.

J Psychopharmacol. 2019 Aug 20:269881119862530. doi: 10.1177/0269881119862530.
[Epub ahead of print]

BACKGROUND: Kratom (Mitragyna speciosa Korth) use has increased in Western countries, with a rising number of associated deaths. There is growing debate about the involvement of kratom in these events. AIMS: This study details the characteristics of such fatalities and provides a 'state-of-the-art' review. METHODS: UK cases were identified from mortality registers by searching with the terms 'kratom', 'mitragynine', etc. Databases and online media were searched using these terms and 'death', 'fatal*', 'overdose', 'poisoning', etc. to identify additional cases; details were obtained from relevant officials. Case characteristics were extracted into an Excel spreadsheet, and analysed employing descriptive statistics and thematic analysis. RESULTS: Typical case characteristics (n = 156): male (80%), mean age 32.3 years, White (100%), drug abuse history (95%); reasons for use included self-medication, recreation, relaxation, bodybuilding, and avoiding positive drug tests. Mitragynine alone was identified/ implicated in 23% of cases. Poly substance use was common (87%), typically controlled/recreational drugs, therapeutic drugs, and alcohol. Death cause(s) included toxic effects of kratom ± other substances; underlying health issues. CONCLUSIONS: These findings add substantially to the knowledge base on kratom-associated deaths; these need systematic, accurate recording. Kratom's safety profile remains only partially understood; toxic and fatal levels require quantification.

DOI: 10.1177/0269881119862530
PMID: 31429622

5. The Trouble With Kratom: Analytical and Interpretative Issues Involving Mitragynine. Papsun DM, Chan-Hosokawa A, Friederich L, Brower J, Graf K, Logan B.

J Anal Toxicol. 2019 Sep 10;43(8):615-629. doi: 10.1093/jat/bkz064.

Mitragynine is the primary active alkaloid in the leaves of the tropical tree Mitragyna speciosa, and goes by the popular names "Kratom", biak-biak and maeng da. Mitragynine is increasingly seen in forensic toxicology casework including driving under the influence of drugs and medicolegal death investigation cases. The toxicity of mitragynine continues to be debated in the scientific community as advocates highlight its long history of use in Southeast Asia and testimonials to its benefits by present-day users, while opponents point to an increasing number of adverse events tied to mitragynine use in Western societies. Quantitative reports of mitragynine in biological specimens from forensic investigations in the literature are sparse and may be influenced by poor analyte stability and inadequate resolution of mitragynine from its diastereomers, which could lead to falsely elevated concentrations and subsequently render those reported concentrations inappropriate for comparison to a reference range. Over the course of 27 months, 1,001 blood specimens submitted to our laboratory tested positive for mitragynine using a sensitive and specific quantitative LC-MS/MS method; concentrations ranged from 5.6-29,000 ng/mL, with mean and median concentrations of 410 ± 1,124 and 130 ng/mL, respectively. Mitragynine presents an analytical challenge that requires a method that appropriately separates and identifies mitragynine itself from its isomers and other related natural products. We describe a validated analytical method and present a short series of case reports that provide examples of apparent adverse events, and the associated range of mitragynine concentrations. This type of analytical specificity is required to appropriately interpret mitragynine concentrations detected in biological specimens from forensic casework and assess its potential toxicity.

DOI: 10.1093/jat/bkz064
PMID: 31424079

6. Rebound metabolic acidosis following intentional amygdalin supplement overdose. Shively RM, Harding SA, Hoffman RS, Hill AD, Astua AJ, Manini AF.

Clin Toxicol (Phila). 2019 Jul 19:1-4. doi: 10.1080/15563650.2019.1640369. [Epub ahead of print]

Introduction: Amygdalin, marketed misleadingly as supplement "Vitamin B17," is a cyanogenic glycoside. When swallowed, it is hydrolyzed into cyanide in the small intestine, which causes histotoxic hypoxia via inhibition of cytochrome c oxidase. It remains available for purchase online despite a ban from the US Food and Drug Administration. We report a case of massive intentional amygdalin overdose resulting in recurrent cyanide toxicity after initial successful antidotal therapy. Case summary: A 33-year-old woman intentionally ingested 20 g of "apricot POWER B17 Amygdalin" supplements. She presented five hours post-ingestion with vital signs: P 127 bpm, BP 112/65 mmHg, RR 25/min, temperature 98.1 °F, and SpO2 98% RA. She was in agitated delirium, diaphoretic, and mydriatic. Her VBG was notable for a pH of 7.27 (rr 7.32-7.42) and lactate 14.1 mmol/L (rr 0.5-2.2), with ECG demonstrating QTc 538 ms (normal <440 ms). She was empirically treated with hydroxocobalamin and supportive care, but worsened clinically, requiring intubation and additional hydroxocobalamin and sodium thiosulfate, which resolved her toxicity. Twelve hours later, she developed recurrent hypotension, acidemia, and QTc prolongation that resolved with repeat hydroxocobalamin and sodium thiosulfate dosing. Discussion: Our case demonstrates rebound metabolic acidosis after massive amygdalin overdose. Toxicity was associated with prolonged QTc, which warrants further investigation into clinical significance. Redosing of combination antidotal therapy suggested efficacy without adverse effects.

DOI: 10.1080/15563650.2019.1640369
PMID: 31322009

7. Beware Energy Drinks: A Case of a Toxic Triad Syndrome in a Diabetic Patient With Nonalcoholic Fatty Liver Disease. Uwaifo GI.

Am J Med Sci. 2019 Oct;358(4):304-311. doi: 10.1016/j.amjms.2019.07.015. Epub 2019 Aug 2.

Energy drinks are widely used and very popular. They are touted as "harmless" energy boosters for use in professional, recreational and domestic settings. They are typically high in monosaccharides, and caffeine with other assorted products like ginseng. Careful study of the potential risks of their use is nonexistent while rigorous documentation of their touted energy boosting capacity is also meagre. We present the cautionary case of a 46-year-old Caucasian man with well-controlled type 2 diabetes and nonalcoholic fatty liver disease who developed a toxic triad syndrome of gastritis, hepatitis and pancreatitis within 4 months of commencing daily consumption of 2-3 160z cans of the energy drink Monster Energy. His clinical symptoms and biochemical derangements promptly resolved with stopping the beverage. We discuss the potential risks inherent in unsupervised liberal consumption of energy drinks and the need for both caution and vigilance among clinicians and patients.

DOI: 10.1016/j.amjms.2019.07.015
PMID: 31543103

8. Drug-Induced Liver Injury - Types and Phenotypes. Hoofnagle JH, Björnsson ES.

N Engl J Med. 2019 Jul 18;381(3):264-273. doi: 10.1056/NEJMra1816149.

No abstract

Comment in
N Engl J Med. 2019 Oct 3;381(14):1395.
N Engl J Med. 2019 Oct 3;381(14):1395-1396.
N Engl J Med. 2019 Oct 3;381(14):1396.

DOI: 10.1056/NEJMra1816149
PMID: 31314970 [Indexed for MEDLINE]

9. Acute liver injury induced by red yeast rice supplement. Loubser L, Weider KI, Drake SM.

BMJ Case Rep. 2019 Mar 25;12(3). pii: e227961. doi: 10.1136/bcr-2018-227961.

A 64-year-old woman previously taking no medications presented with acute hepatitis 6 weeks after starting a red yeast rice supplement to decrease her cholesterol. Red yeast rice is commonly used for hyperlipidaemia as an alternative to statins as it contains monacolin K, the same active chemical in lovastatin. Infectious, toxic and autoimmune causes for injury were ruled out, and liver biopsy was consistent with drug induced liver injury. Red yeast rice appeared to be the cause of her hepatotoxicity. After stopping the supplement and initiating treatment with intravenous methylprednisolone, liver enzymes decreased towards baseline.

DOI: 10.1136/bcr-2018-227961
PMID: 30910808 [Indexed for MEDLINE]

10. [Red yeast rice as the presumed cause of acute kidney and liver failure]. [Article in Danish] Peterslund P, Christensen HD, Urbahnke J, Cappeln AV.

Ugeskr Laeger. 2019 Sep 30;181(40). pii: V02190107.

Alternative medicine and food supplements are getting increasingly popular. The regulation of these remedies is lenient compared to the regulation of traditional medicine. Hence knowledge about adverse effects from alternative medicine and food supplements is scarce. This is a case report of a 65-year-old healthy male who had a daily intake of 315 mg of red yeast rice and was admitted to hospital with acute renal deficiency, hepatitis and rhabdomyolysis. This case report underlines the potential problems with these remedies, namely a lack of knowledge of adverse effects and a lack of control with the production.

PMID: 31566178

11. Bioactivation of herbal constituents: mechanisms and toxicological relevance. Wen B, Gorycki P.

Drug Metab Rev. 2019 Aug 26:1-45. doi: 10.1080/03602532.2019.1655570. [Epub ahead of print]

The increase in the application of herbal medicines and dietary products over the last decades has been accompanied with a substantial increase in case reports of herb-induced toxicities. Metabolic activation of relatively inert functional groups to chemically reactive metabolites is often considered to be an obligatory event in the etiology of drug-induced adverse reactions. Circumstantial evidence suggests that several herb-induced toxicities are a result of transformation of herbal constituents to electrophilic reactive metabolites that can covalently bind to vital macromolecules in the body, exemplified by aristolochic acids and pyrrolizidine alkaloids. At physiologically relevant concentrations, bioactivation of furanocoumarins and methylenedioxyphenyl compounds leads to mechanism-based inactivation of drug metabolizing enzymes and clinically manifested herb-drug interactions. Of particular interest is that several organic functional groups embedded in herbal constituents act as a toxicophore as well as a pharmacophore, resembling the electrophilic warheads in the development of targeted covalent inhibitors. The aim of this review is to provide a cataloging of bioactivation mechanisms of herbal substructures,

structure-activity relationships, biological targets, and assist in circumventing the structural liability in the development of more effective and safer herb-based NCEs.

DOI: 10.1080/03602532.2019.1655570
PMID: 31448961

12. Hepatotoxicity of a Cannabidiol-Rich Cannabis Extract in the Mouse Model. Ewing LE, Skinner CM, Quick CM, Kennon-McGill S, McGill MR, Walker LA, ElSohly MA, Gurley BJ, Koturbash I.

Molecules. 2019 Apr 30;24(9). pii: E1694. doi: 10.3390/molecules24091694.

The goal of this study was to investigate Cannabidiol (CBD) hepatotoxicity in 8-week-old male B6C3F1 mice. Animals were gavaged with either 0, 246, 738, or 2460 mg/kg of CBD (acute toxicity, 24 h) or with daily doses of 0, 61.5, 184.5, or 615 mg/kg for 10 days (sub-acute toxicity). These doses were the allometrically scaled mouse equivalent doses (MED) of the maximum recommended human maintenance dose of CBD in EPIDIOLEX® (20 mg/kg). In the acute study, significant increases in liver-to-body weight (LBW) ratios, plasma ALT, AST, and total bilirubin were observed for the 2460 mg/kg dose. In the sub-acute study, 75% of mice gavaged with 615 mg/kg developed a moribund condition between days three and four. As in the acute phase, 615 mg/kg CBD increased LBW ratios, ALT, AST, and total bilirubin. Hepatotoxicity gene expression arrays revealed that CBD differentially regulated more than 50 genes, many of which were linked to oxidative stress responses, lipid metabolism pathways and drug metabolizing enzymes. In conclusion, CBD exhibited clear signs of hepatotoxicity, possibly of a cholestatic nature. The involvement of numerous pathways associated with lipid and xenobiotic metabolism raises serious concerns about potential drug interactions as well as the safety of CBD.

DOI: 10.3390/molecules24091694
PMCID: PMC6539990
PMID: 31052254 [Indexed for MEDLINE]

13. Development of a consensus approach for botanical safety evaluation - A roundtable report. Galli CL, Walker NJ, Oberlies NH, Roe AL, Edwards J, Fitzpatrick S, Griffiths JC, Hayes AW, Mahony C, Marsman DS, O'Keeffe L.

Toxicol Lett. 2019 Oct 10;314:10-17. doi: 10.1016/j.toxlet.2019.05.008. Epub 2019 May 10.

Botanical safety science continues to evolve as new tools for risk assessment become available alongside continual desire by consumers for "natural" botanical ingredients in consumer products. Focusing on botanical food/dietary supplements a recent international roundtable meeting brought together scientists to discuss the needs, available tools, and ongoing data gaps in the botanical safety risk assessment process. Participants discussed the key elements of botanical safety evaluations. They provided perspective on the use of a decision tree methodology to conduct a robust risk assessment and concluded with alignment on a series of consensus statements. This discussion highlighted the strengths and vulnerabilities in common assumptions, and the participants shared additional perspective to ensure that this end-to-end safety approach is sufficient, actionable and timely. Critical areas and data gaps were identified as opportunities for future focus. These include, better context on history of use, systematic assessment of weight of evidence, use of in silico approaches, inclusion of threshold of toxicological concern considerations, individual substances/matrix interactions of plant constituents, assessing botanical-drug interactions and adaptations needed to apply to in vitro and in vivo pharmacokinetic modelling of botanical constituents.

DOI: 10.1016/j.toxlet.2019.05.008
PMID: 31082523 [Indexed for MEDLINE]

14. Bizarre and scary ECG in yew leaves poisoning: Report of successful treatment. Cerrato N, Calzolari G, Tizzani P, Actis Perinetto E, Dellavalle A, Aluffi E.

Ann Noninvasive Electrocardiol. 2018 Sep;23(5):e12535. doi: 10.1111/anec.12535. Epub 2018 Feb 28.

Yew leaves poisoning is a rare life-threatening intoxication, whose diagnosis can be difficult. Initial symptoms are nausea, vomiting, abdominal pain, dizziness, tachycardia, muscle weakness, confusion, beginning within 1 hr from ingestion and followed by bradycardia, ventricular arrhythmias, ventricular fibrillation, severe hypotension, and death. Taxine-derived alkaloids are responsible for the toxicity of the yew leaves, blocking sodium and calcium channels, and causing conduction abnormalities. Because of lack of a specific antidote and limited efficacy of common antiarrhythmic drugs, prompt diagnosis, detoxification measures, and immediate hemodynamic support (also with transvenous cardiac stimulation) are essential.

DOI: 10.1111/anec.12535
PMID: 29488680 [Indexed for MEDLINE]

15. A Probable Fatal Case of Oleander (Nerium oleander) Poisoning on a Cattle Farm: A New Method of Detection and Quantification of the Oleandrin Toxin in Rumen. Rubini S, Rossi SS, Mestria S, Odoardi S, Chendi S, Poli A, Merialdi G, Andreoli G, Frisoni P, Gaudio RM, Baldisserotto A, Buso P, Manfredini S, Govoni G, Barbieri S, Centelleghe C, Corazzola G, Mazzariol S, Locatelli CA.

Toxins (Basel). 2019 Jul 25;11(8). pii: E442. doi: 10.3390/toxins11080442.

Oleander (Nerium oleander) is an ornamental plant common in tropical and sub-tropical regions that is becoming increasingly widespread, even in temperate regions. Oleander poisoning may occur in animals and humans. The main active components contained in the plant are cardiac glycosides belonging to the class of cardenolides that are toxic to many species, from human to insects. This work describes a case of oleander poisoning that occurred on a small cattle farm and resulted in the fatality of all six resident animals. Furthermore, theinvestigation of the poisonous agent is described, with particular focus on the characterization of the oleandrin toxin that was recovered from the forage and rumen contents. The innovation of this study is the first description of the detection and quantification of the oleandrin toxin by liquid chromatography-high resolution mass spectrometry (LC-HRMS) in rumen.

DOI: 10.3390/toxins11080442
PMCID: PMC6723884
PMID: 31349685

16. Blood Lead Levels of Children Using Traditional Indian Medicine and Cosmetics: A Feasibility Study. Keosaian J, Venkatesh T, D'Amico S, Gardiner P, Saper R.

Glob Adv Health Med. 2019 Aug 22;8:2164956119870988. doi: 10.1177/2164956119870988. eCollection 2019.

Background: Traditional Indian cosmetics and Ayurvedic medicines may contain lead. Previous studies have shown a relationship between eye cosmetic use (kohl) in children and elevated blood lead levels (BLLs) > 10 µg/dL. However, an association between Ayurvedic use and elevated BLLs in children is unknown and understudied. Methods: We assessed the feasibility of collecting BLLs in children attending Ayurvedic outpatient settings in India. Our pilot study took place over 3 days in the summer of 2010 at a large public Ayurveda hospital and a small pediatric clinic in southern India. Using a trained interpreter, we administered a standardized questionnaire in Malayalam, assessing sociodemographics, Ayurvedic medicine use, kohl use, and other potential risk factors for lead exposure, to parents of pediatric outpatients. We also analyzed BLLs using a portable lead analyzer. Results: The study enrolled 29 children (mean age, 3.8 years). The mean BLL was 6.7 µg/dL (SD = 3.5; range, 3.5-20.2). Seventy-two

percent of the children used Ayurvedic medicine in the past 2 years and 55% reported kohl use. Mean BLL of Ayurvedic users and nonusers was 6.2 µg/dL and 8.5 µg/dL, respectively (P = .08). Kohl users had a statistically significant higher BLL than nonusers (8.0 µg/dL vs 5.3 µg/dL, P = .03). Conclusions: It is feasible to collect BLLs in pediatric Ayurvedic outpatient clinics in southern India. Collaborative relationships with community members and hospital staff were essential. Further research is needed to investigate Ayurveda and kohl use as risk factors for elevated lead burden among Indian children.

DOI: 10.1177/2164956119870988
PMCID: PMC6709437
PMID: 31489260

17. Childhood lead poisoning from domestic products in China: A case study with implications for practice, education, and policy. Wang J, El-Fahmawi A, Yan C, Liu J.

Public Health Nurs. 2019 Aug 19. doi: 10.1111/phn.12652. [Epub ahead of print]

OBJECTIVE: This study aimed to report three representative childhood lead poisoning cases in China from domestic products exposure and to highlight their critical implications for practice, education, and policy in prevention and treatment of childhood lead poisoning by health care providers, especially public health nurses. DESIGN AND SAMPLE: Three representative childhood lead poisoning cases occurring in 2017 were collected and analyzed. RESULTS: The lead exposure sources of three cases were evaluated by experts in the field and determined to be tin pots, home factories for tinfoil, and contamination of folk medicine, respectively. These cases demonstrated that the lack of lead exposure risk assessment, insufficient knowledge of potential lead exposure sources, underdeveloped policy, and regulations were areas for improvement. CONCLUSIONS: The best strategies for preventing lead poisoning include an appropriate risk assessment of lead exposure, implementation of comprehensive parental health education, conduction of further research by public health providers, and the application of policy strategies by the government. It was determined that public health nurses are at the frontline of prevention of lead poisoning in children.

DOI: 10.1111/phn.12652
PMID: 31429129

18. Lead Toxicity due to Use of Traditional Medicines in a Child with Type 1 Diabetes Mellitus. Soni V, Dayal D.

Indian Pediatr. 2019 Jan 15;56(1):77-78.

No abstract

PMID: 30806374 [Indexed for MEDLINE]

19. A case of chronic lead poisoning with herbal-based medication. Jain S, Gupta A, Ray A, Vikram NK.

BMJ Case Rep. 2019 Apr 1;12(4). pii: e227954. doi: 10.1136/bcr-2018-227954.

No abstract

DOI: 10.1136/bcr-2018-227954
PMID: 30940669 [Indexed for MEDLINE]

20. Lethal Injection of a Castor Bean Extract: Ricinine Quantification as a Marker for Ricin Exposure Using a Validated LC-MS/MS Method. Verougstraete N, Helsloot D, Deprez C, Heylen O, Casier I, Croes K.

J Anal Toxicol. 2019 Apr 1;43(3):e1-e5. doi: 10.1093/jat/bky100.

Ricin is a highly toxic agent derived from the castor bean plant (Ricinus communis). Poisoning occurs commonly by oral ingestion of the beans. Injection of ricin is believed to be more lethal. Ricin is a large glycosylated protein difficult to detect in clinical samples. Instead, ricinine, a small alkaloid found in the same beans, is used as surrogate marker for ricin exposure. We describe a simple LC-MS/MS method for the detection of ricinine in serum, blood and urine, validated according to EMA guidelines and successfully applied to patient samples of a suicidal death after injection of a castor bean extract. A 26-year-old man self-presented to the emergency department with severe abdominal cramps and nausea after injection of a castor bean extract. Due to rapid deterioration of his hemodynamic function despite early aggressive fluid resuscitation, he was transferred to ICU. Abdominal cramps worsened and a fulminant diarrhea developed, resulting in hypovolemic shock and cardiorespiratory collapse. Despite full supportive therapy, the patient died approximately 10 hours after injection due to multiple organ failure. Ricinine was quantified by LC-MS/MS after LLE with diethyl ether using ricinine-D3 as internal standard. Six hours after injection, ricinine concentrations in serum and blood were 16.5 and 12.9 ng/mL, respectively, which decreased to 12.4 and 10.6 ng/mL, 4 hours later. The urinary concentration was 81.1 ng/mL 7 hours after injection, which amply exceeded the levels previously reported in similar cases with lethal outcome. Concentrations of ricinine, compatible with a lethal exposure to castor beans, were detected in serum, blood and urine. Ricinine was also found in bile and liver tissue.

DOI: 10.1093/jat/bky100
PMID: 30590581 [Indexed for MEDLINE]

21. Guaiacum Toxicity: An Unusal Poisoning. Bhushan D, Agarwal M.

J Assoc Physicians India. 2019 Apr;67(4):92.

Guaiacum is a homeopathic medicine used for arthritis, syphilis and tonsillitis. Its use as a substance abuse is not properly described in literature. Its excess intake may be life threatening and can damage the vision permanently.

PMID: 31311227 [Indexed for MEDLINE]

22. Case of anaphylaxis caused by black ginger in a dietary supplement. Hayashi E, Sowa-Osako J, Fukai K, Natsumi A, Yagami A, Sato N, Shimojo N, Nakamura M, Matsunaga K, Tsuruta D.

J Dermatol. 2019 Feb;46(2):e56-e57. doi: 10.1111/1346-8138.14592. Epub 2018 Aug 27.

No abstract

DOI: 10.1111/1346-8138.14592
PMID: 30152038 [Indexed for MEDLINE]

23. Prevalence and Predictors of Higher-Risk Supplement Use Among Collegiate Athletes. Sassone J, Muster M, Barrack MT.

J Strength Cond Res. 2019 Feb;33(2):443-450. doi: 10.1519/JSC.0000000000002979.

Sassone, J, Muster, M, and Barrack, MT. Prevalence and predictors of higher-risk supplement use among National Collegiate Athletic Association Division I athletes. J Strength Cond Res 33(2): 443-450, 2019-

This study aimed to identify the prevalence and predictors associated with the use of higher-risk dietary supplements, defined as supplements containing herbal ingredients, caffeine, or those classified for weight loss, muscle-building, or as a preworkout supplement, among 557 National Collegiate Athletic Association Division I male and female collegiate athletes. Although 252 (45.2%) athletes reported the use of a dietary supplement on ≥2 days per week over the past year, 46 (8.3%) athletes met criteria for higher-risk supplement use. Twenty (3.6%) athletes reported the use of herbal, 1 (0.2%) caffeinated, 5 (0.9%) weight loss, 28 (5.0%) preworkout, and 1 (0.2%) muscle-building supplements. Body mass index status (BMI ≥30 kg·m), sport-type (sports using the phosphocreatine energy system), and college year (≥4th year) were associated with the use of preworkout, muscle-building, or herbal supplements. A multiple regression analysis identified predictors of higher-risk supplement use including the number of dietary supplements used in the past year (odds ratio [OR] = 2.1, 95% confidence interval [CI] = 1.7-2.7, $p < 0.001$), the reported motivation of taking dietary supplements to gain muscle and lose body fat (OR = 3.5, 95% CI = 1.1-11.7, $p = 0.04$), and the motivation to increase athletic endurance (OR = 3.5, 95% CI = 4.0, 95% CI = 1.6-9.9, $p < 0.005$). These factors may be considered as a part of a screening process to evaluate athletes with an increased risk of higher-risk supplement use and potential consequences to health or eligibility status.

DOI: 10.1519/JSC.0000000000002979
PMID: 30531412 [Indexed for MEDLINE]

24. Dietary Supplement Use in a Large, Representative Sample of the US Armed Forces. Knapik JJ, Austin KG, Farina EK, Lieberman HR.

J Acad Nutr Diet. 2018 Aug;118(8):1370-1388. doi: 10.1016/j.jand.2018.03.024.
Epub 2018 Jun 19.

BACKGROUND: Dietary supplement (DS) use is prevalent among the US Armed Forces personnel, but representative cross-service comparisons and characteristics of personnel using DSs are limited. OBJECTIVE: Examine DS use and characteristics associated with use in a representative sample of US Armed Forces personnel (Army, Navy, Air Force, Marine Corps, and Coast Guard) using data from the 2011 Department of Defense Survey of Health-Related Behaviors. DESIGN AND PARTICIPANTS: A stratified random sample of service members (SMs) was contacted and asked to complete a questionnaire assessing personal characteristics and DS use. RESULTS: Overall, 69% of the 39,877 SMs reported using DSs ≥1 time per week. The most commonly used DSs were multivitamin or multiminerals (50%), antioxidants (34%), individual vitamins or minerals (33%), bodybuilding supplements (27%), fish oils (26%), herbals (16%), and weight-loss supplements (16%). Multiple logistic regression indicated overall DS use was higher among women, those with higher educational levels, Marine Corps SMs, officers, those with higher body mass index, those engaged in greater physical activity and weight training, and people in weight control programs. DS use was lower when peer groups or leadership discouraged substance abuse. CONCLUSIONS: DS use was considerably higher in the US Armed Forces compared with civilian populations, although many demographic and lifestyle factors associated with use were similar. Some categories of DSs extensively used by SMs such as bodybuilding supplements have been associated with adverse events. Discouraging substance abuse through peer groups and leadership actions may reduce use of unnecessary or dangerous DSs.

DOI: 10.1016/j.jand.2018.03.024
PMID: 29907343 [Indexed for MEDLINE]

25. Evaluation and Behavior of Spanish Bodybuilders: Doping and Sports Supplements. Sánchez-Oliver AJ, Grimaldi-Puyana M, Domínguez R.

Biomolecules. 2019 Mar 28;9(4). pii: E122. doi: 10.3390/biom9040122.

The use of doping agents has these days become a public health problem, as it also affects young and non-competitive amateurs in different sports. To prepare for competition, bodybuilders perform aggressive dietary protocols, so, bodybuilders frequently consume nutritional supplements (NS) and banned substances in large dosages. Thus, the aim of this study is to analyze the prevalence of banned substances consumption and NS intake in competitive level bodybuilders. A total of 48 bodybuilders (44 males and 4 females) completed a validated online questionnaire on NS consumption. The quantitative data was presented as a mean (M) ± standard deviation (SD), as well as having minimum and maximum values. The categorical variables were expressed using frequencies and percentages. 83.3% of the participants declared that they had consumed or would consume banned substances, the most consumed being anabolic steroids (72.9%). One hundred percent of those sampled use NS. Whey protein (96%), branched-chain amino acids (BCAA) (94%), creatine (85%) and vitamin complexes (83%) were the most consumed, however, there is a low consumption of certain NS which could also increase athletic performance.

DOI: 10.3390/biom9040122
PMCID: PMC6523090
PMID: 30925786 [Indexed for MEDLINE]

26. Use of complementary medicine products: a nationally representative cross-sectional survey of 2019 Australian adults. Harnett JE, McIntyre E, Steel A, Foley H, Sibbritt D, Adams J.

BMJ Open. 2019 Jul 16;9(7):e024198. doi: 10.1136/bmjopen-2018-024198.

Erratum in BMJ Open. 2019 Aug 15;9(8):e024198corr1.

OBJECTIVES: To provide a contemporary description of complementary medicine (CM) product use in Australia. DESIGN: Cross-sectional survey. SETTING: Online. PARTICIPANTS: A nationally representative sample (n=2019) of the Australian adult population. PRIMARY AND SECONDARY OUTCOME MEASURES: Primary outcomes measures included the use and type of CM products used, and source of recommendation. Secondary measures included disclosure of CM product use to health practitioners, concomitant use of pharmaceuticals and predictors of use. RESULTS: Prevalence of CM product use was 50.3%, with the most frequently used being vitamin and mineral supplements (VMSs; 47.8%) and homoeopathic medicines the least used (6.8%). A majority of respondents using CM products were also using pharmaceutical products, and small but significant associations were found between the use of CM products and pharmaceuticals ($p<0.05$). Small statistically significant associations were found between use of vitamin products and disclosure of use to general practitioners (GPs; Cramer's V=0.13, p=0.004) and hospital doctors (Cramer's V=0.11, p=0.04), and between use of herbal medicines and disclosure to both GPs (Cramer's V=0.11, p=0.02) and hospital doctors (Cramer's V=0.12, p=0.03). Women, those with higher education and those with no private health insurance were more likely to use CM products ($p<0.05$), while those without chronic conditions were less likely to use CM products ($p<0.05$) ($\chi2(29)=174.70$, $p<0.001$). CONCLUSIONS: The number of Australians using CM products has remained relatively stable and substantial for nearly two decades. The majority of CM use relates to VMSs. Given the number of Australians using both CM products and pharmaceutical medicines, it is important to evaluate the potential clinical implications of such practices to ensure safe, effective and coordinated health policy and patient care.

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27. Trends in botanical dietary supplement use among US adults by cancer status: The National Health and Nutrition Examination Survey, 1999 to 2014. Li C, Hansen RA, Chou C, Calderón AI, Qian J.

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BACKGROUND: Patients with cancer may use botanical dietary supplements (BDS) in an attempt to manage the side effects of chemotherapy, yet evidence about BDS use among patients with cancer is limited. The authors examined trends in BDS use among US adults according to cancer status and patient characteristics. METHODS: A serial, cross-sectional study was conducted using data from the National Health and Nutrition Examination Survey from 1999 through 2014 (n = 43,644). Self-reported cancer diagnosis history and any BDS use in the preceding 30 days were determined. The prevalence of BDS use was calculated in each cycle for respondents with and without cancer, both overall and by patient characteristics. Simple linear regression models were applied to test for trends in BDS use at a 2-sided P value < .05. Multiple logistic regression models were performed to identify the patient factors associated with BDS use. The results were weighted to represent national estimates. RESULTS: The prevalence of BDS use was greater among participants who had cancer compared with participants who did not have cancer, but trends remained stable during 1999 through 2014 for both groups. Trends in BDS use declined in patients with cancer who were older (Ptrend = .047), had a low annual family income (Ptrend = .028), and had a lower education level (Ptrend = .004). Among the respondents without cancer, trends in BDS use declined in those who were middle-aged (Ptrend = .025), non-Hispanic whites (Ptrend = .025), those with a lower education level (Ptrend = .011), and those who were not receiving prescription medication (Ptrend = .036). Patient age, sex, race/ethnicity, income, education, and health conditions were associated with BDS use. CONCLUSIONS: The overall use of BDS remained stable during 1999 through 2014 for US adults with and without cancer, but it varied by individual characteristics.

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