
Database: Embase <1974 to 2025 April 08>, Ovid MEDLINE(R) ALL <1946 to April 08, 2025>

Search Strategy:

- 1 exp *urolithiasis/ (81011)
- 2 (urolithiasis or renolithiasis).tw. (22840)
- 3 *Nephrolithiasis/ or *Kidney Calculi/ (39669)
- 4 (nephrolithiasis or ureterolithiasis or cystolithiasis).tw. (18916)
- 5 ((renal or kidney* or urinary or ureter* or urethra* or nephron* or bladder) and (calculus or calculi or calculosis or calculuses or stone or stones or lithiasis or colic or residual fragment* or insignificant fragment*)).ti. (47172)
- 6 *Ureterolithiasis/ or *Ureter Stone/ (7451)
- 7 *kidney colic/ or *kidney pain/ (2246)
- 8 (uric acid stone* or cysteine stone* or struvite stone* or calcium oxalate stone* or calcium stone*).ti. (2082)
- 9 ((renal or kidney*) adj3 lithotripsy*).tw. (1671)
- 10 *nephrolithotomy/ and nephrolithotomy*.tw. (2120)
- 11 or/1-10 (106933)
- 12 limit 11 to english language (85228)
- 13 (exp animals/ or exp animal/) not (humans/ or human/) (11213482)
- 14 ((rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset\$1 or basic research or cell lines or in vitro or animal model or canine) not (human* or men or women or patients)).tw. (8398837)
- 15 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. (5603231)
- 16 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (5791177)
- 17 case report/ or case reports/ or (case report or case series or a case or a rare case).ti. (6111891)
- 18 or/13-17 (28953158)
- 19 12 not 18 (48999)
- 20 ((Gout or Gall bladder or gallbladder or Bleeding disorder* or Splenectomy or polycystic kidney or medullary sponge kidney or transplantation or transplanted or cancer or cancers or carcinoma* or HIV or antiretroviral or esoteric immune or epilepsy or Amyotrophic Lateral Sclerosis or Cushing disease* or tremors or migraine or neurogenic or gastric or intestinal or Hypertension or Arthritis or Allergies or allergy or Diabetes or herbal or gene or genes) not (non or "not" or without or excluding or other than)).ti. (8740443)
- 21 19 not 20 (46813)
- 22 random:.mp. or randomized controlled trial.pt. (4353930)
- 23 clinical trial:.mp. or controlled clinical trial.pt. (3432680)
- 24 Randomized controlled trials/ or controlled clinical trial/ (1011536)
- 25 (placebo* or blind* or RCT or RCTs).tw. (1432605)
- 26 (controlled or trial).tw. (3834683)
- 27 Meta analysis/ or "systematic review"/ (971353)
- 28 (Medline or Embase or Cochrane or Pubmed or literature search or literature review).tw. (1285837)
- 29 (Systematic review* or meta-analysis).tw. (1100510)
- 30 or/22-29 (9546190)
- 31 21 and 30 (8856)
- 32 limit 31 to ed=20230502-20250409 use medall [Limit not valid in Embase; records were retained] (497)
- 33 limit 31 to dt=20230502-20250409 use medall [Limit not valid in Embase; records were retained] (655)
- 34 limit 31 to dc=20230502-20250409 use oemezd (732)
- 35 (2024* or 2025*).ep. (1704579)
- 36 31 and 35 (356)
- 37 32 or 33 or 34 or 36 (1428)

38 remove duplicates from 37 (919)
39 limit 38 to yr="2023 -current" (872)

1.

Cadmium Exposure and Health Outcomes: An Umbrella Review of Meta-analyses. [Review]

Xu W, Wang S, Ruan W, Hao M, Jiang K, Guo H, Geng A, Man M, Hu Z, Liu Y, Jin G, Shi H, Du J, Ge K, Zhang Z

Ovid MEDLINE(R) ALL
Environmental Research. 121547, 2025 Apr 04.

[Journal Article. Review]

UI: 40189009

OBJECTIVE: This umbrella review synthesizes evidence from meta-analyses to assess the health outcomes associated with cadmium (Cd) exposure.

METHODS: Literature search was conducted in four Databases: PubMed, Embase, APA PsycNe, and the Cochrane Databases. Evaluating evidence strength via Assess Systematic Reviews 2 (AMSTAR 2), umbrella review methodology and Grading of Recommendations, Assessment, Development, and Evaluation (GRADE).

RESULTS: Our review encompassed 79 non-overlapping studies, investigating 48 unique health outcomes through 113 independent effect sizes. Using the AMSTAR 2 tool, we found that 2 (3%) meta-analyses were rated as high quality, 6 (8%) as moderate quality, 38 as low quality, and 33 as very low quality. Applying the GRADE criteria, we observed that 1 (1%) effect size was rated A (male fertility), 8 (7%) were rated B (breast cancer, prostate cancer, hypertension, stroke, urolithiasis), 30 were rated C, and 74 were rated D. According to the umbrella review methodology, 5 (4%) outcomes provided highly suggestive evidence, 13 (12%) provided suggestive evidence, 51 provided weak evidence (class IV), and 44 had insufficient evidence for statistically significant results (class V). Meta-analyses on circulatory diseases, pregnancy outcomes, perinatal outcomes, skeletal and connective tissue diseases, neurological disorders, urinary system diseases, and male fertility had >80% statistically significant results, while endocrine system diseases and mental and behavioral disorders had <33%.

CONCLUSION: Cd exposure is significantly linked to various health outcomes, with implications for clinical practice and public health recommendations.

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Search Strategy:

- 1 exp *urolithiasis/ (82218)
- 2 (urolithiasis or renolithiasis).tw. (23129)
- 3 *Nephrolithiasis/ or *Kidney Calculi/ (40473)
- 4 (nephrolithiasis or ureterolithiasis or cystolithiasis).tw. (19198)
- 5 ((renal or kidney* or urinary or ureter* or urethra* or nephron* or bladder) and (calculus or calculi or calculosis or calculuses or stone or stones or lithiasis or colic or residual fragment* or insignificant fragment*)).ti. (47898)
- 6 ((renal or kidney* or urinary or ureter* or urethra* or nephron* or bladder) adj (calculus or calculi or calculosis or calculuses or stone or stones or lithiasis or colic or residual fragment* or insignificant fragment*)).ab,kf. (75379)
- 7 ureteroscopy.ti. and stone*.ab. (3571)
- 8 *Ureterolithiasis/ or *Ureter Stone/ (7608)
- 9 *kidney colic/ or *kidney pain/ (2634)
- 10 (uric acid stone* or cysteine stone* or struvite stone* or calcium oxalate stone* or calcium stone*).ti. (2106)
- 11 ((renal or kidney*) adj3 lithotripsy*).tw. (1702)
- 12 *nephrolithotomy/ and nephrolithotomy*.tw. (2183)
- 13 or/1-12 (134047)
- 14 limit 13 to english language (109787)
- 15 (exp animals/ or exp animal/) not (humans/ or human/) (11308527)
- 16 ((rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset\$1 or basic research or cell lines or in vitro or animal model or canine) not (human* or men or women or patients)).tw. (8481047)
- 17 conference abstract.pt. or Congresses as Topic/ or Conference Review.pt. (5648822)
- 18 note/ or editorial/ or letter/ or Comment/ or news/ or (note or editorial or letter or Comment or news).pt. (5825694)
- 19 case report/ or case reports/ or (case report or case series or a case or a rare case).ti. (6153160)
- 20 or/15-19 (29185195)
- 21 14 not 20 (61623)
- 22 ((Gout or Gall bladder or gallbladder or Bleeding disorder* or Splenectomy or polycystic kidney or medullary sponge kidney or transplantation or transplanted or cancer or cancers or carcinoma* or HIV or antiretroviral or esoteric immune or epilepsy or Amyotrophic Lateral Sclerosis or Cushing disease* or tremors or migraine or neurogenic or gastric or intestinal or Hypertension or Arthritis or Allergies or allergy or Diabetes or herbal or gene or genes) not (non or "not" or without or excluding or other than)).ti. (8877673)
- 23 21 not 22 (58521)
- 24 random:.mp. or randomized controlled trial.pt. (4574126)
- 25 clinical trial:.mp. or controlled clinical trial.pt. (3834594)
- 26 Randomized controlled trials/ or controlled clinical trial/ (1029304)
- 27 (placebo* or blind* or RCT or RCTs).tw. (1529607)
- 28 (controlled or trial).tw. (4045211)
- 29 Meta analysis/ or "systematic review"/ (994295)
- 30 (Medline or Embase or Cochrane or Pubmed or literature search or literature review).tw. (1312390)
- 31 (Systematic review* or meta-analysis).tw. (1127009)
- 32 or/24-31 (10030050)
- 33 23 and 32 (11841)
- 34 limit 33 to ed=20230502-20250409 use medall [Limit not valid in Embase; records were retained] (563)
- 35 limit 33 to dt=20230502-20250409 use medall [Limit not valid in Embase; records were retained] (810)

- 36** limit 33 to dc=20230502-20250409 use oemezd (891)
 - 37** (2024* or 2025*).ep. (1930878)
 - 38** 33 and 37 (530)
 - 39** 34 or 35 or 36 or 38 (1819)
 - 40** remove duplicates from 39 (1161)
 - 41** limit 40 to yr="2023 -current" (1109)
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