Noodles

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Abstract

Noodles in the HMI library has 603 reported results for lead, cadmium, total arsenic, inorganic arsenic, total mercury, nickel, chromium, aluminum, tin, antimony, Cu, Mn, Zn, V, Ba, DBT, DOT, OTC_sum_as_Sn, Si, sumOTC, TBT, TPhT and TPT from 22 sources. WHO gems/food submissions reported lead in noodles as sold from 35 results in 2 reporting regions, with subgroup medians from 3.15 to 6.2 µg/kg. For cadmium, GEMS/Food gave subgroup medians from 16.5 to 54 µg/kg from 66 results.

1 | Noodles overview

Across 4 other studies of ordinary farms and markets, reported lead means and medians on a dry-weight basis ranged from 43 µg/kg (Charles et al. 2017) to 3,160 µg/kg (Charles et al. 2017).[7] For cadmium, 3 studies on a dry-weight basis reported means and medians from 4 µg/kg (Kakoma et al. 2021) to 1,200 µg/kg (Kakoma et al. 2021).[6] Higher results came from contaminated or exposed settings rather than ordinary supply. Noodles as sold from retail brand C had cadmium higher at 1,300 µg/kg, against 100 µg/kg for retail brand A in the same study.[4]

For a buyer the practical points are the form bought, the basis a result is reported on, where the noodles came from and the laboratory's reporting limit. Testing finds contamination but does not remove it.

2 | What counts as noodles

This page covers noodles in 5 forms kept separate in every comparison: noodles as sold (513 results), dried noodles (48 results), noodles flour or meal (32 results), cooked noodles (8 results) and noodles powder or ground (2 results).[1,2,3,4,5,6] Foods made from noodles that have their own pages, such as egg noodles and rice noodles, are covered there.

Results stay on the basis each source reports: as sold or fresh weight, dry weight, or unstated. Dry-weight, as-sold and unstated results are never pooled, and no moisture conversion is applied.

3 | How metals reach noodles

The evidence on how metals reach noodles comes from studies that compared exposed and ordinary settings. Noodles as sold from retail brand C had cadmium higher at 1,300 µg/kg, against 100 µg/kg for retail brand A in the same study.[4]

These are observational comparisons from single studies; the size of the difference depends on the site, metal and distance.

4 | Which forms and regions measured lower

The hmi reference for lead in noodles as sold pools 17 subgroup units from 3 sampling families, with a median of between 0.6 and 6.6 µg/kg and a middle half spanning below 6.2 (lower quartile) and between 400 and 600 µg/kg (upper quartile).[1,2,4] for lead in noodles as sold, the reference median was below 50 µg/kg, with a middle half from below 50 to below 50 µg/kg across 23 units.[6] cooked for lead in noodles, the reference median was below 14 µg/kg, with a middle half from below 14 to between 84.5 and 91.5 µg/kg across 6 units.[1]

Among GEMS/Food reporting regions, noodles as sold had the lowest lead subgroup median in PAHO (3.15 µg/kg) and the highest in WPRO (6.2 µg/kg); reporting regions are markets, not growing areas.[1] For cadmium, the lowest regional median was in EMRO (16.5 µg/kg) and the highest in PAHO (54 µg/kg).[1]

In one study, lead across 13 groups of noodles ranged from 200 µg/kg (CBD outlet) to 2,500 µg/kg (CBD outlet); the lowest is the lowest observed in that study, not an established sourcing preference.[6] In another study, lead across 11 groups of noodles ranged from 550 µg/kg (retail instant noodle product D) to 1,460 µg/kg (retail instant noodle product G); the lowest is the lowest observed in that study, not an established sourcing preference.[11]

5 | Processing, cooking and preparation

Processed or prepared forms were compared only with unprocessed noodles in the same study and group. Cooked noodles (PAHO) had cadmium lower at 9.7 µg/kg, against 17.5 µg/kg for the unprocessed form in the same group (noodles as sold).[1]

Forms differ in water content, so a per-kilogram difference is not by itself a measured removal or gain of metal.

6 | Mitigation for noodles

Lot testing against the applicable limit is the check that can be verified.

7 | Trade-offs and limits of controls

Avoiding exposed growing areas lowered the metal measured in the studies available, but no study measured the cost or supply effect of doing so.[4] Metals do not move together, so a lot that passes a lead limit says little about cadmium, arsenic or nickel unless those are tested as well.

8 | Testing noodles for metals

Results depend on the method and its reporting limit. Reporting limits for lead ranged from 1 µg/kg (WHO GEMS/Food) to 3,000 µg/kg (WHO GEMS/Food), so a non-detect from a less sensitive method says much less.[1] Reporting limits for cadmium ranged from 1 µg/kg (Atawy 2026) to 50 µg/kg (Kakoma et al. 2021), so a non-detect from a less sensitive method says much less.[5,6] Reporting limits for total arsenic ranged from 2 µg/kg (WHO GEMS/Food) to 50 µg/kg (WHO GEMS/Food), so a non-detect from a less sensitive method says much less.[1]

A useful lot result names the form, the basis and a quantification limit well below the limit that applies.

9 | Buying and verifying noodles

No maximum level for metals in noodles was verified from primary text for this page; buyers should confirm the limit that applies in the destination market.

10 | Exposure from noodles

No source in the library converted noodles concentrations into a verified estimate of intake for a defined population. Concentrations describe the food, not individual risk.

11 | Evidence review and remaining gaps

Every source record that names noodles was decided on its content: 22 occurrence extracted, 22 records in all. The occurrence table renders every extracted result; held values remain visible with their reason.

References identify the sources used in these answers. The Sources index preserves additional discovery links; inclusion there does not mean a source has been reviewed for this assessment. Corrections, completed searches, new direct evidence and changes in requirements should reopen the relevant answer.

12 | Noodles FAQs

The library reports lead, cadmium, total arsenic, inorganic arsenic, total mercury, nickel, chromium, aluminum, tin, antimony, Cu, Mn, Zn, V, Ba, DBT, DOT, OTC_sum_as_Sn, Si, sumOTC, TBT, TPhT and TPT in noodles, most often lead, cadmium and total arsenic.[1,2,3,4] WHO gems/food submissions reported lead in noodles as sold from 35 results in 2 reporting regions, with subgroup medians from 3.15 to 6.2 µg/kg.[1]

In the studies available, noodles from contaminated or exposed settings carried more metal than noodles from the same study's control.[4] noodles as sold from retail brand A had lead higher at 600 µg/kg, against 400 µg/kg for retail brand A in the same study.[4]

Among GEMS/Food reporting regions, noodles as sold had the lowest lead subgroup median in PAHO (3.15 µg/kg) and the highest in WPRO (6.2 µg/kg); reporting regions are markets, not growing areas.[1] For cadmium, the lowest regional median was in EMRO (16.5 µg/kg) and the highest in PAHO (54 µg/kg).[1]

Only comparisons between forms in the same study are available, not before-and-after measurements of the same noodles.[1] cooked noodles (PAHO) had cadmium lower at 9.7 µg/kg, against 17.5 µg/kg for the unprocessed form in the same group (noodles as sold).[1]

Inorganic arsenic, the more toxic form, was measured in 4 results from 3 sources, far fewer than total arsenic.[1,12,13] Across 2 other studies of ordinary farms and markets, reported inorganic arsenic means and medians with

the basis not stated ranged from 3 µg/kg (Centre for Food Safety FEHD HKSAR 2012) to 14 µg/kg (European Food Safety Authority (EFSA) 2014).[12,13]

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STATUS AND LICENCE

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DATA AVAILABILITY

Every source behind this ingredient profile is listed with its own source record at https://heavymetalindex.com/ingredients/noodles#sources.

COMPETING INTERESTS

The Heavy Metal Index reports what the peer-reviewed and regulatory literature supports. It is operated separately from any certification program, does not evaluate or endorse brands, and does not use certification thresholds as evidence for the statements made here.

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