Pork bacon

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Abstract

Pork bacon in the HMI library has 105 reported results for lead, cadmium, total arsenic, inorganic arsenic, total mercury, nickel, chromium, aluminum, tin, antimony, uranium, Cu, Fe, Mn, Zn, Se, Ba, CrIII, Mg, Mo and Tl from 8 sources. WHO GEMS/Food submissions reported lead in pork bacon as sold from 238 results in 3 reporting regions, with subgroup medians from 3.8 to 9.14 µg/kg. In the US Total Diet Study, cooked pork bacon had a median lead result below 4 µg/kg across 27 composites from 2017-2020.

1 | Pork bacon overview

Across 2 other studies of ordinary farms and markets, reported lead means and medians on an as-sold or fresh-weight basis ranged from 2.3 µg/kg (Spungen et al. 2024) to 3.93 µg/kg (Bilandžić et al. 2020).[3,5] For cadmium, 2 studies on an as-sold or fresh-weight basis reported means and medians from 1 µg/kg (Bilandžić et al. 2020) to 1.9 µg/kg (Spungen et al. 2024).[3,5]

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

2 | What counts as pork bacon

This page covers pork bacon in 2 forms kept separate in every comparison: pork bacon as sold (96 results) cooked and pork bacon (9 results).[1,2,3,4,5,6]

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 pork bacon

No study in the library compared pork bacon from contaminated and ordinary settings, so the routes by which metals reach it are not measured here.

4 | Which forms and regions measured lower

The HMI reference for lead in pork bacon as sold pools 48 subgroup units from 1 sampling family, with a median of below 17.1 µg/kg and a middle half spanning below 6.95 (lower quartile) and between 3.65 and 20 µg/kg (upper quartile).[1] cooked for lead in pork bacon, the reference median was below 4 µg/kg, with a middle half from below 4 to below 4 µg/kg across 27 units.[2] for cadmium in pork bacon as sold, the reference median was below 3 µg/kg, with a middle half from below 1.48 to between 1.23 and 6 µg/kg across 40 units.[1]

Among GEMS/Food reporting regions, pork bacon as sold had the lowest lead subgroup median in PAHO (3.8 µg/kg) and the highest in EURO (9.14 µg/kg); reporting regions are markets, not growing areas.[1] For total arsenic, the lowest regional median was in WPRO (21.5 µg/kg) and the highest in EURO (33.8 µg/kg).[1]

Targeted pork bacon as sold samples in WPRO had total arsenic lower at 21 µg/kg, against 21.5 µg/kg for WPRO in the same study.[1]

5 | Processing, cooking and preparation

No processing study for metals in this food is in the library yet.

6 | Mitigation for pork bacon

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

7 | Trade-offs and limits of controls

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 pork bacon for metals

Results depend on the method and its reporting limit. Reporting limits for lead ranged from 2 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 0.5 µg/kg (WHO GEMS/Food) to 1,000 µg/kg (WHO GEMS/Food), so a non-detect from a less sensitive method says much less.[1] Reporting limits for total arsenic ranged from 3 µg/kg (FDA Total Diet Study) to 200 µg/kg (WHO GEMS/Food), so a non-detect from a less sensitive method says much less.[1,2]

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

9 | Buying and verifying pork bacon

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

10 | Exposure from pork bacon

No source in the library converted pork bacon 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 pork bacon was decided on its content: 8 occurrence extracted, 8 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 | Pork bacon FAQs

The library reports lead, cadmium, total arsenic, inorganic arsenic, total mercury, nickel, chromium, aluminum, tin, antimony, uranium, Cu, Fe, Mn, Zn, Se, Ba, CrIII, Mg, Mo and Tl in pork bacon, most often lead, cadmium and total arsenic.[1,2,3,4] WHO GEMS/Food submissions reported lead in pork bacon as sold from 238 results in 3 reporting regions, with subgroup medians from 3.8 to 9.14 µg/kg.[1]

Among GEMS/Food reporting regions, pork bacon as sold had the lowest lead subgroup median in PAHO (3.8 µg/kg) and the highest in EURO (9.14 µg/kg); reporting regions are markets, not growing areas.[1] For total arsenic, the lowest regional median was in WPRO (21.5 µg/kg) and the highest in EURO (33.8 µg/kg).[1]

Inorganic arsenic, the more toxic form, was measured in 2 results from 2 sources, far fewer than total arsenic.[1,4] WHO GEMS/Food submissions reported inorganic arsenic in pork bacon as sold from 1 result in 1 reporting region, with subgroup medians below 20 µg/kg, mostly non-detects.[1]

References

[1] GEMS/Food Contaminants database heavy-metal exports
World Health Organization · GEMS/Food Contamination Monitoring and Assessment Programme · 2026 · extranet.who.int
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[2] FY2018-FY2020 TDS Elements Analytical Results
U.S. Food and Drug Administration · FDA Total Diet Study · 2022 · www.fda.gov
DATASET

[3] Evaluation of Element Concentrations in Beef and Pork Meat Cuts Available to the Population in the Croatian Capital
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Baxter M and Brereton N · Food and Environment Research Agency report for the UK Food Standards Agency, Fera report 15/06, project FS102081 · 2015 · www.food.gov.uk
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[5] Infants' and young children's dietary exposures to lead and cadmium: FDA total diet study 2018-2020
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[6] CONCENTRATION OF CADMIUM IN MEAT AND SELECTED MEATS PRODUCTS
Lukáčová A, Lopašovský Ľ, Kňažická Z, and Golian J · Journal of Microbiology, Biotechnology and Food Sciences 4 (special issue 3), 102-105 · 2015 · doi.org/10.15414/jmbfs.2015.4.special3.102-105
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STATUS AND LICENCE

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COMPETING INTERESTS

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DATA AVAILABILITY

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

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