

Table S1: Database searches.

Combinations searched	Search terms (Filters: Humans/Journal Articles/Languages English, Spanish, French or Portuguese, 2000-2020)	Results
PAHs + Ni	("human monitoring" OR "human biological monitoring" OR "occupational monitoring" OR "occupational exposure" OR "biomarkers of exposure" OR worker* OR "human exposure" OR "occupational exposure" OR "occupational exposure" [MeSH Terms] OR "occupational settings" OR "industrial settings" OR "occupational hygiene" OR "industrial hygiene" OR "human biomonitoring" OR "biomonitoring" [MeSH Terms] OR "exposure monitoring" OR "exposure at the workplace" OR "workplace" OR "occupational hazard" OR "occupational health surveillance") AND (("Polycyclic aromatic hydrocarbons" OR "benzo(a)pyrene" OR pyrene* OR PAHs OR PAHs [MeSH Terms]) AND ( nickel OR ni))	50
PAHs + Cr(VI)	("human monitoring" OR "human biological monitoring" OR "occupational monitoring" OR "occupational exposure" OR "biomarkers of exposure" OR worker* OR "human exposure" OR "occupational exposure" OR "occupational exposure" [MeSH Terms] OR "occupational settings" OR "industrial settings" OR "occupational hygiene" OR "industrial hygiene" OR "human biomonitoring" OR "biomonitoring" [MeSH Terms] OR "exposure monitoring" OR "exposure at the workplace" OR "workplace" OR "occupational hazard" OR "occupational health surveillance") AND (("Polycyclic aromatic hydrocarbons" OR "benzo(a)pyrene" OR pyrene* OR PAHs OR PAHs [MeSH Terms]) AND ("hexavalent chromium" OR "Cr(VI)" OR "chromium" OR "chromate" OR "chromium (VI)"))	35
Ni + Cr(VI)	("human monitoring" OR "human biological monitoring" OR "occupational monitoring" OR "occupational exposure" OR "biomarkers of exposure" OR worker* OR "human exposure" OR "occupational exposure" OR "occupational exposure" [MeSH Terms] OR "occupational settings" OR "industrial settings" OR "occupational hygiene" OR "industrial hygiene" OR "human biomonitoring" OR "biomonitoring" [MeSH Terms] OR "exposure monitoring" OR "exposure at the workplace" OR "workplace" OR "occupational hazard" OR "occupational health surveillance") AND ("hexavalent chromium" OR "Cr(VI)" OR "chromium" OR "chromate" OR "chromium (VI)") AND ( nickel OR ni))	250
PAHs + Ni + Cr(VI)	("human monitoring" OR "human biological monitoring" OR "occupational monitoring" OR "occupational exposure" OR "biomarkers of exposure" OR worker* OR "human exposure" OR "occupational exposure" OR "occupational exposure" [MeSH Terms] OR "occupational settings" OR "industrial settings" OR "occupational hygiene" OR "industrial hygiene" OR "human biomonitoring" OR "biomonitoring" [MeSH Terms] OR "exposure monitoring" OR "exposure at the workplace" OR "workplace" OR "occupational hazard" OR "occupational health surveillance") AND (("Polycyclic aromatic hydrocarbons" OR "benzo(a)pyrene" OR pyrene* OR PAHs OR PAHs [MeSH Terms]) AND ( nickel OR ni)) AND ("hexavalent chromium" OR "Cr(VI)" OR "chromium" OR "chromate" OR "chromium (VI)"))	21
<b>Total studies</b>		<b>356</b>