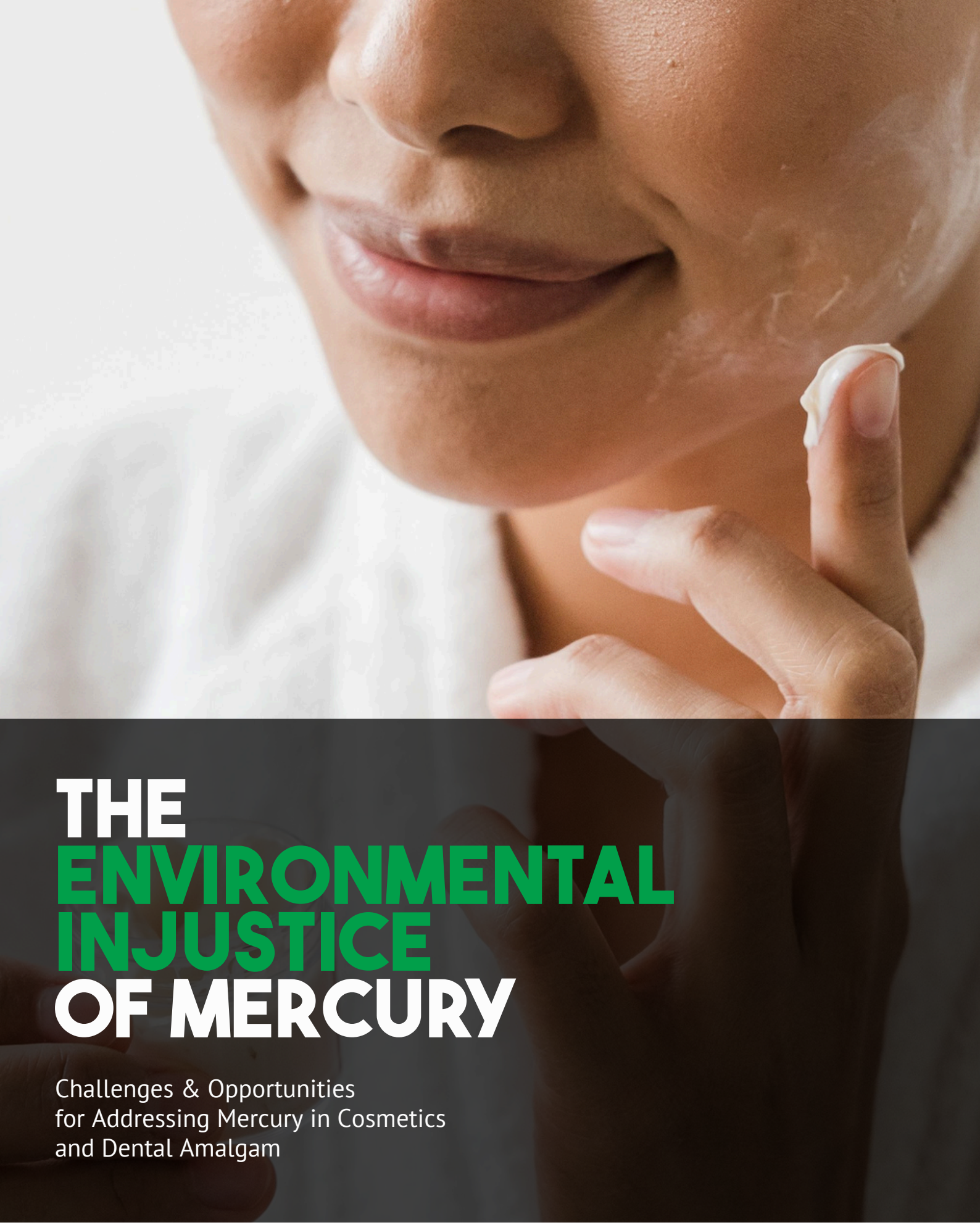

THE ENVIRONMENTAL INJUSTICE OF MERCURY

Challenges & Opportunities
for Addressing Mercury in Cosmetics
and Dental Amalgam

AUGUST 2026

WE ACT FOR ENVIRONMENTAL JUSTICE

ACKNOWLEDGEMENTS

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ABOUT WE ACT FOR ENVIRONMENTAL JUSTICE

Founded in 1988, WE ACT for Environmental Justice is a community-based organization that has a long track-record of successfully advocating for environmental justice policies and programs at the city, state, and federal levels. We are headquartered in Harlem, where we have more than 1,100 members, and have a Federal Policy Office in Washington, DC.

While our focus is on the communities of Northern Manhattan, including Harlem, Inwood, and Washington Heights, we work to enact change in all places where systemic racism and intentional disinvestment have stymied access to healthy environments for communities of color and low-income.

Learn more at weact.org.

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EXECUTIVE SUMMARY

WE ACT for Environmental Justice , in partnership with the National Medical Association and the Children's Environmental Health Network, convened the *Environmental Injustice of Mercury: Challenges & Opportunities for Addressing Mercury in Cosmetics and Dental Amalgam* international conference on August 27 and 28, 2024 at the headquarter offices of the United States Environmental Protection Agency. The conference brought together over 60 participants comprised of advocates, experts, and government officials from across the United States and international agencies to create a joint strategy to bring an end to mercury exposure.

Over two days, participants examined the drivers of racial and class disparities in mercury exposure, challenges to efforts to limit these exposures, and strategies for overcoming these challenges. Day 1 focused on the use of mercury in skin lightening products and Day 2 focused on use of mercury in dental amalgam. While medical researchers focused on the health effects of and intervention strategies for reducing and eliminating mercury exposure particularly in low-income communities of color, policy experts described the efficacy of international, federal, and local efforts to regulate mercury in cosmetics and dental amalgam.

The discussion revealed areas of tension and agreement regarding efforts aimed at tackling the reduction and eventual elimination of mercury in skin lightening products and dental amalgam. Disagreements centered on the question of when action was necessary. While some participants believed that research to further understand the health effects of mercury exposure is necessary, others saw research as delay tactics to avoid legal action. On the other hand, participants also had many points of agreement. First, participants overwhelmingly agreed that efforts aimed at education must be prioritized to ensure that the public, healthcare professionals, and decision-makers are well-informed about the potential health risks and health consequences of exposure to mercury. Second, participants generally agreed that to be successful, interventions that aimed at limiting availability of mercury-containing require collaboration across sectors and at all levels of government. Third, participants agreed that while the effectiveness of regulations is limited by enforcement capacity, legal action remains an essential tool to reduce mercury exposure. Finally, participants committed to take action to raise the collective voice of minority stakeholders advocating for stronger government action at the state and local levels, including tracking and data collection to understand the scope of the issue and inform regulatory action.

This report outlines goals and action items participants identified as necessary to address the environmental injustice of mercury, as expressed by presentations and discussions that took place during this convening. Please note that this report is based on WE ACT's analysis of the conference proceedings and does not represent the views of the convening attendees or their organizations.

PART I
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GOAL 1
ESTABLISH NEW AND ENFORCE EXISTING REGULATIONS

Action 1: Increase inter-agency collaboration on local, national, and international levels

Mercury is routinely added to a variety of skin lightening products such as creams, soaps, and lotions, because it is effective in blocking melanin production. Jorge Daniel Taillant, Executive Director of the Commission for Environmental Cooperation (CEC), opened the proceedings by characterizing mercury-added skin lightening products as a "multi-actor, pervasive, systemic issue." In the first session, speakers shared that despite international, national, and local regulations, mercury-added cosmetics remain readily available, putting vulnerable populations at risk. Danielle Vallée described the CEC's international mercury tracking and regulatory efforts and outlined the CEC-led North American Regional Action Plan for Mercury, a 10-year government cooperation initiative to reduce mercury exposure risks.

Yvonne Santiago and Katrina D'Egidio from the U.S. Food and Drug Administration (FDA) emphasized the importance of collaboration between federal agencies, state agencies, and local advocates. They shared that partner organizations' research has been vital support for FDA's regulatory efforts, including adding mercury-containing products to the FDA's Import Alerts based on the New York City Department of Health and Mental Hygiene's (NYC DOHMH) product testing efforts.

The speakers asserted that breaking down the international trade that continues to make mercury-added products available requires global collaboration to strengthen advocacy for the national implementation, including enforcement, of the United Nations Environmental Programme (UNEP) Minamata Convention on Mercury (Mimata Convention) and similar international agreements. They also said that advocacy (whether local, regional, or national) should occur through coalition building, collective action, and data sharing. Critically, government action must be informed by local contexts and work alongside community-led, culturally-responsive engagement with vulnerable populations.

Action 2: Regulate products in accordance with the Minamata Convention on Mercury

Many Parties to the Minamata Convention still lack national regulations for mercury in cosmetics, and where regulations exist, implementation and enforcement are often insufficient. Current U.S. regulations governing mercury-added skin lightening products—including the Coronavirus Aid, Relief, and Economic Security (CARES) Act and the Modernization of Cosmetics Regulation Act (MoCRA)—apply only to cosmetics containing more than 1 part per million (ppm) mercury. These laws have not been updated to align with the Minamata Convention's recent amendment requiring Parties to phase out mercury-added cosmetics by 2025. Because cosmetics usually contain mercury as a result of manufacturers inten-tionally adding mercury, restricting products based on added mercury rather than mercury content more accurately addresses this issue and reduces costly testing burdens.

Chris Douglass from the Environmental Investigation Agency (EIA) discussed shortcomings of the U.S.'s regulatory framework, which focuses on specific compounds rather than banning mercury as a class. For example, the Toxic Substances Control Act (TSCA), the law governing exportation of mercury compounds and mercury-added products, only bans six mercury compounds. Undercover investigations by EIA revealed that Texas-based Noah Chemicals knowingly exports mercury compounds for use in skin lightening products. The company likely exports ammoniated mercury, a mercury com-pound commonly found in skin lightening products that is not included in the TSCA restrictions, to product manufacturers abroad. Douglass stressed that as long as mercury compounds are banned on a case-by-case basis rather than as a class of chemicals, mercury will continue to be illegally traded and added to consumer products.

Action 3: Include e-commerce in regulations

Michael Bender of the Zero Mercury Working Group (ZMWG) asserted that online sale accounts for a significant portion of the mercury-added cosmetics market, and e-commerce has dramatically increased accessibility of these hazardous products. Globally, mercury-added products are readily available at online shopping platforms like Amazon, eBay, Shopee, and Facebook. ZMWG's 2022-2023 report of global online retail platforms (featuring 213 products from 23 online sellers) found that 90 percent of the samples exceeded 1 ppm mercury, with 17 percent containing between 25,000 and 75,000 ppm mercury.

Enforcement against online platforms is difficult because they often claim they should not be held liable for illegal products sold by third-party sellers. To overcome this challenge, the European Union (EU) has implemented the product safety pledge, requiring online retailers to report compliance measures every six months. This approach has proven effective; in one instance, the EU was able to remove 70-80 percent of hazardous products from signatory websites within two days. Further, in January 2025, the California Attorney General announced that Amazon Inc. reached a settlement to comply with Proposition 65 for facilitating third-party sales of mercury-containing skin lightening products. This pivotal decision suggests that warning labels can be a mechanism for holding online platforms globally accountable.

Action 4: Allocate resources to regulatory agencies to expand enforcement capacity

John Gilkeson and Michael Xiong from Minnesota Pollution Control Agency (MPCA) and Dr. Paromita Hore and Maia Fitzstevens from NYC DOHMH discussed their respective agencies' efforts to enforce local laws restricting mercury-added products. Their experience revealed that, without sufficient resources for enforcement, legislation prohibiting the sale of mercury-added skin lightening products can fail. They concluded that enforcement capacity must be expanded through increased funding and resources.

Minnesota enacted the first state ban of mercury-added cosmetics in 2007. Since then, MPCA has conducted search and seizure events at large markets, implemented buyback programs for sellers, and worked with retailers and online platforms to raise awareness and stop harmful product sales.

NYC DOHMH also outlined its intervention model: identify and purchase potentially offending products; conduct laboratory tests for mercury; and if a product exceeds 1 ppm, enforce against the seller, including stop sale order, require proper disposal, make public supplier information, and alert customers. This approach has removed almost 2,000 mercury-containing products from New York City shelves. NYC DOHMH shares data with local, national, and international authorities, though the alerts have only once resulted in an FDA Import Alert.

Both agencies shared challenges to enforcement efforts, including products reappearing on shelves after restriction, sellers changing labels to avoid detection, and new products continually appearing on the market. Their work is primarily limited by funding, personnel, and other resources.

Moreover, very few government agencies in the U.S. pursue enforcement. To be effective, more states and federal agencies must increase their enforcement activities.

GOAL 2
RESEARCH MERCURY CONTENT, TRADE, & MARKETING OF SKIN LIGHTENING PRODUCTS

Action 1: Measure mercury content in skin lightening products

California Department of Public Health (CDPH), MPCA, NYC DOHMH, and ZMWG discussed their efforts measuring mercury content of suspect skin lightening products. They agreed that as long as products are regulated by mercury content rather than intentional addition of mercury by manufacturers, testing remains critically important. Simultaneously, they acknowledged the limitations of testing, noting that testing is resource-intensive and difficult given the volume of products that continually appear on the market.

Dr. Lori Copán of CDPH shared that since 2010, her agency has collected 586 skin lightening products. Of the products tested, 25 percent exceeded the U.S. FDA's 1 ppm limit, with the average containing 9,000 ppm mercury. Importantly, 24 creams contained the most toxic form of mercury, methylmercury. MPCA also tested over 500 creams, soaps, and deodorants, finding that 60 percent contained mercury with most measuring over 1,000 ppm.

NYC DOHMH tested approximately 200 products between 2009-2022, finding about 20 percent contained mercury above 1 ppm, with many over 10,000 ppm. NYC DOHMH also screened for mercury using hand-held vapor analyzers and showed measurable mercury vapor was emitted from products. Mercury vapor represents a serious risk for anyone in proximity to the product, including product sellers or household members of users. CDPH found similar household contamination results. Michael Bender also shared results from ZMWG testing of 775 products during 2017, 2018, 2019, and 2022.

Although testing approaches have limits (including insufficient funding, lack of personnel and other resources, and need for an international repository for testing results to collectively store data and inform national detention lists), they generate evidence crucial for enforcement efforts. Therefore, government agencies and advocacy organizations must increase their testing capacity.

Action 2: Research global trade networks of mercury compounds

Chris Douglass discussed EIA's undercover investigations of production, trade, and sale in North America, Europe, and Asia which is described in the report "Mercury in Retrograde: The Dark World of Toxic Skin Lightening Products." EIA's interviews with high-level representatives from manufacturers[26] revealed the commonplace practice of adding mercury to skin lightening products, typically 3-4 percent by weight. Some manufacturers collaborate with companies from other countries for global distribution.

From many years of testing products from around the world, ZMWG reported that most products they see were manufactured in Pakistan, followed by Thailand and China. ZMWG estimates 66 million mercury-added skin lightening products are sold globally each year, and Pakistan produces at least 17 percent of them.

These investigations effectively illuminate the illegal trade, manufacturing, and sales network of the skin lightening industry. This information enables governments to reduce product availability by focusing enforcement on complicit actors. Efforts to understand trade networks help identify opportunities to disrupt the supply chain.

Action 3: Research racialized marketing practices of skin lightening product companies

The targeted marketing of skin lightening products to women of color perpetuates colorism and racist, Eurocentric beauty standards. Aside from putting them at risk for mercury exposure, the promotion of products to achieve lighter skin endangers women's physical, psychological, and social health. To reduce demand, community education about product harms and intervention against Eurocentric beauty standards are necessary. While some marketing is based on local sellers' know-ledge of their customers, multinational companies invest heavily in researching effective advertising for their customer base. The marketing of skin lightening products and their impact on women and girls of color worldwide are not well-known. Examining marketing techniques is necessary to reduce reduce demand for these products.

GOAL 3
PREVENT EXPOSURE THROUGH COMMUNITY EDUCATION

Action 1: Combat colorism in at-risk communities

Even with the strongest regulations, if demand exists, these products will continue to be available in vulnerable communities. Social pressure to lighten skin has persisted for centuries. Addressing mercury in skin lightening products requires addressing colorism, racism, white supremacy, and Eurocentric beauty standards.

The FDA's Skin Lightening Consumer Education Project found overall low awareness of product ingredients among users, low awareness of skin care product absorption, low label-checking tendencies, and low understanding of label languages. This highlights a significant lack of awareness among consumers about the prevalence of mercury use in skin creams. Even when users know about mercury's toxicity, they are unlikely to know their exposure risk because mercury cannot be seen or smelled, and most products don't list mercury as an ingredient.

Training programs can be very effective at raising awareness. Dr. Astrid Williams from Sienna Girl Jones shared that after attending a community training program catered toward African immigrants in the U.S., 67 percent of participants felt their understanding of mercury-added skin lighteners increased significantly, and 100 percent felt confident in their ability to avoid mercury.

Direct community engagement is essential for reducing demand.

Dr. Williams asserted that, in addition to educating consumers about physical harms, colorism needs acknowledgment as the root cause of this issue, and racist beauty standards must be actively dismantled. She noted that compared to white women, women of color have higher levels of beauty product-related chemicals in their bodies, independent of socioeconomic status.

Educational materials must be accessible and tailored to communities' ethnic and racial backgrounds, spoken languages, and cultural nuances. To effectively disrupt internalized Eurocentric beauty standards, engagement must be community-led and locally context-ualized. A "train-the-trainer" program led by WE ACT for Environmental Justice and Columbia University in 2024 exemplifies effective community-driven engagement. This project developed evidence-based education materials and culturally-specific dissemination strategies to increase awareness among vulnerable and under-served communities. Training materials covered biological harm and created space for discussing racism and colorism in the beauty industry. WE ACT and Columbia worked closely with local community-based organizations to tailor the materials to demographic and linguistic needs of the target audiences. Organization staff reported community members found training valuable and informative, with high engagement demonstrating materials were appropriate and well-received.

Action 2: Create systems of preventative and responsive medical care

In group discussions, conference participants pointed out that preventative and responsive care systems for mercury-added skin lightening products are absent, because healthcare workers often are not aware of mercury exposure symptoms and are not trained about what questions to ask to identify potential mercury sources in patients' lives. Participants identified two major steps the medical field can take to mitigate mercury poisoning from consumer products like skin lightening creams: incorporate information about exposure and risks in medical training curricula and institutionalize mercury screening and treatment pro-cedures, especially in practices serving comm-unities of color where prevalence of lightening cream use is high. MPCA and NYC DOHMH offer valuable resources for healthcare providers.

In addition to improving recognition and therefore treatment of mercury poisoning, educating medical professionals about the sources of exposure is important because they exercise significant influence over their patients' lifestyle and can play an essential role in discouraging skin lightening product use.

GOAL 4
BIOMONITOR, SCREEN, AND TREAT MERCURY EXPOSURE

Action 1: Implement biomonitoring and screenings for mercury in medical facilities

Eric Bind from New Jersey Department of Health (NJDOH) discussed the serious illnesses that can result from mercury exposure: skin rashes, hair loss, nausea, vomiting, and in serious cases, kidney damage, lung damage, sterility, and coma. Dr. Lori Copán noted that mercury chemically disrupts the blood-brain barrier's protection and causes neurological problems like anxiety, depression, impaired motor skills, mood disorders, and memory loss. Because symptoms of mercury poisoning can vary and share commonali-ties with other illnesses, mercury exposure is often misdiagnosed. Consequently, illness is left to worsen, and affected people are left with increas-ing healthcare expenses and deteriorating mental health from the stress.

Mercury-added skin lightening products pose a unique threat because even people who do not use the product can be exposed. Mercury can enter the body through a variety of pathways: inhalation (from vaporized mercury), ingestion, and absorption through the skin. Mercury in the body can also cross the placenta, so people who use mercury-containing products during pregnancy expose their fetuses to mercury, causing permanent damage: decreased bone growth, microcephaly, preterm birth, blindness, deafness, learning disabilities, lower IQ, and even fetal death. Because some symptoms of mercury exposure like nausea and vomiting overlap with pregnancy symptoms, diagnosis, and therefore intervention, is difficult.

Despite the seriousness of mercury poisoning, effective treatment is further delayed by the failure to establish mercury exposure identification protocols. Patient screening and biomonitoring can be effective at addressing the treatment gap. Bind shared extensive findings from biomonitoring of expectant mothers and infants in New Jersey. NJDOH has conducted pre- and perinatal mercury and lead screenings since 2019, performing over 21,000 tests and follow-ups. They found 59.8 percent of mercury-exposed babies faced potential adverse health outcomes (compared to 13.6 percent for lead poisoning and 3 percent for chlamydia, a venereal disease). Multiple case studies showed intervention during early prenatal visits was very effective at decreasing a baby's mercury levels leading up to birth. Bind suggests that establishing effective screening and biomonitoring programs across the U.S. would greatly contribute to under-standing mercury's effects and provide critical education and intervention opportunities for vulnerable communities.

Action 2: Establish frameworks for mercury exposure investigations

When preventative screenings are not available, case investigations can provide crucial resources to those suffering from mercury toxicity. Dr. Copán reported on CDPH's robust poisoning case investigation program which has investigated 75 poison -ing cases and 107 reported exposures. Through the case investigations, CDPH learned that many products acquired from investigations are homemade or altered to contain mercury post-market sale. In one case, a woman became comatose after using a cream labeled as Pond's, a popular maker of personal care products, but that contained methyl-mercury added by the third-party seller.

Investigations also revealed that children can be exposed through physical contact with users – for example, via breastfeeding or when users have mercury-containing cream on their hands and touch children's skin or food. CDPH also occasionally conducts contact tracing of direct contact to friends and family who use mercury-containing products or may be indirectly exposed. Copan described one such effort that found "six households with 40 individuals, half of whom were children," exposed to mercury from contact with one reported user. CDPH's comprehensive investigation protocol, including contact tracing, helps identify sources of exposure and provides life-saving resources for patients.

Action 3: Define reference value and research standards for mercury

Bind and Copán agreed that lack of standards for mercury presents challenges for efforts aimed at improving biomonitoring, screening, and treatment. Bind outlined striking differences between public health standards for mercury and lead, another heavy metal neurotoxin. Health effects and exposure pathways for lead are common knowledge among communities and health-care providers whereas mercury exposure and health effects are much less known. Lead has a Centers for Disease Control and Prevention (CDC) reference value (3.5 µg/dL) which activates essential infrastructure to prevent and mitigate harm; mercury does not. Convening participants recommend that a similar response infrastructure should be established for mercury: screening guidelines, medical treatment protocols, tracking and response programs, and product testing and bans. This is a crucial step for protecting the health and wellbeing of populations affected by hazardous mercury-containing products.

PART II
ELIMINATE MERCURY IN DENTAL FILLINGS

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Action 3: Identify and eliminate releases of mercury into the environment

GOAL 2
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Action 1: Provide education to patients, especially for high-risk populations
Action 2: Expand research on mercury-free filling alternatives and access to these options

GOAL 1
ELIMINATE HEALTH DISPARITIES CAUSED BY DENTAL AMALGAM

Action 1: Address dental amalgam as an environmental justice issue

Dr. Mark Mitchell of the National Medical Association (NMA) introduced participants to concerns associated with mercury in dental amalgam. NMA advocates for eliminating mercury in amalgam due to its disproportionate use in low-income communities and communities of color.

The U.S. government is the largest user and funder of dental amalgam. Amalgam is covered by federal insurance programs such as Federal Employees Health Benefits, military and veterans' health-care systems, Indian Health Services (IHS), Medicare, and Medicaid, but mercury-free alternatives are not. Patients using government-sponsored insurance are often from low-income backgrounds and experience vulnerabilities that mercury exposure from amalgam can exacerbate.

Joshuah Marshall from IHS presented on the agency's program to phase-down amalgam in Native American communities. Beginning in 2016, IHS's dental program shifted focus to prevention through initiatives like the Early Childhood Cares Collaborative "Two is Too Late", program. The program ensures children receive oral health check-ups before age two. According to Marshall, IHS has achieved significant reduction in amalgam use (92 percent in children and 70 percent overall). As a result of this success, in May 2024, IHS released a comprehensive plan to reduce amalgam use among Native Americans.

Despite IHS's success, challenges persist because of underfunding and federal medical insurance programs that promote the use of amalgam. More-over, Native American communities still lack access to health-care, not to mention the difficulty of finding providers that offer alternatives to amalgam. Therefore, a broader federal phaseout would help ensure disparities are addressed while reducing mercury exposure nationwide.

Dr. Rueben Warren from Meharry Medical College spoke of dental care's critical role within healthcare, ethics, and social justice, contending that dental care should be considered alongside overall healthcare. Under such a framework, amalgam would be eliminated for its toxic effects on individual and population health and contribution to environmental pollution through waste. He asserts that health disparities justify phasing out amalgam and developing alternatives. Children of color will continue suffering disproportionately until the government takes steps to phase out amalgams.

Sharon Lewis from Connecticut Coalition for Economic and Environmental Justice highlighted how vulnerable communities are subjected to mercury-containing amalgam due to its low cost and durability. Vulnerable populations, particularly communities of color, already face disproportionate pollution burdens from coal power plants, highway emissions, lead

in housing and water, and other contaminated environments. Mercury exposure from dental amalgam can be one of many environmental burdens low-income communities and communities of color face. The accumulation of hazardous exposures, along with historic and systemic factors, result in unjust health disparities that must be addressed through environmental justice frameworks.

Action 2: Eliminate health disparities by phasing out amalgam

Dr. Mitchell emphasized the need for eliminating mercury dental amalgams to address health disparities created by its use. He explained that mercury poisoning is a significant contributor to health disparities in some communities of color. 69-85 percent of elemental mercury is absorbed in lungs, and from there circulate through other systems. Once in the body, mercury can have a long residence time; Dr. Mitchell reported that mercury vapor can be detected in a patient's breath 40 years after their last amalgam placement. Pregnant individuals and their fetuses face specific risks during the perinatal period. Pregnancy mobilizes the body's mercury storage, and circulating mercury can bioconcentrate in the placenta and breastmilk to be passed onto the fetus and child.

Dr. Aimin Chen from University of Pennsylvania used the 2015-2018 National Health and Nutrition Examination Survey to examine the relationship between dental amalgam restorations and elevated inorganic mercury in blood and urine of children. He observed significant disparities in mercury exposure and amalgam restoration occurrence among U.S. children across racial and ethnic groups. Dr. Chen found that Mexican-American and Non-Hispanic Asian children had the highest percentage of detectable blood inorganic mercury levels, which his research established was the result of the presence of dental amalgam. Moreover, Mexican-American children aged 1-19 had the highest prevalence of amalgam use (24 percent) and the highest mean number of teeth with amalgam (0.81) compared to white children (10 percent and 0.32, respectively).

Nsedu Obot Witherspoon from Children's Environmental Health Network indicated that children face unique risks, and often higher risks, from being exposed to mercury because their bodies are still developing. Moreover, unlike adults, children are much more limited in their ability to regulate exposure. Witherspoon suggested that phasing out dental amalgam altogether is the only way to eliminate the health disparities associated with its use.

One global regulatory measure is the Children's Amendment to the Minamata Convention, which requires parties to the amendment to exclude, prohibit, and recommend against amalgam use for children under 15 and pregnant and breastfeeding women. Nations must take additional steps to increase the speed of phasing out mercury to address the health disparities associated with its use.

Andrew Clark from the U.S. Department of State and Tom Groeneveld from the U.S. Environmental Protection Agency (EPA) reviewed the Minamata Convention's scheme for regulating dental amalgam use. Outside of the Children's Amendment, the Minamata Convention on Mercury initially required only a phasedown of mercury in dental amalgam. However, the treaty has strengthened with each convening of the Conference of the Parties (COP), and the number of measures adopted to reduce amalgam use has increased over time. This progression led to the 2025 COP decision to establish a global phase-out date of 2034.

Sylvia Dove of Consumers for Dental Choice and Michael Bender presented case studies from countries that have phased out or restricted amalgam use according to the UNEP Report "Lessons from Countries Phasing Down Dental Amalgam Use." For example, using a multi-faceted approach, Sweden was able to achieve a gradual phase-out of amalgam use. The government worked with dental schools and industry to train new dentists on the use of alternatives.

Simultaneously, Sweden stopped financial support for amalgam, and promoted affordable alternatives through policies and information campaigns. Sweden also employed a precautionary approach to its funding of dental care, emphasizing replacing hazardous material with safer alter-natives and promoting minimally invasive dentistry. As a result, Sweden's eventual ban of amalgams was well supported across sectors.

Action 3: Identify and eliminate releases of mercury into the environment

Michael Bender and John Gilkeson highlighted how mercury contamination in the environment and resulting human exposure present significant enviromental health issues. According to the EPA, approximately 5.1 tons of mercury are discharged from dentist offices in the U.S. annually, with the majority released directly into the environment. Mercury enters the environment following placement and removal of dental amalgam fillings and has been detected in clinic traps, drains, and sewer pipes, posing significant risks to dental clinic workers.

Dental wastewater lines provide an ideal environment for creating methylmercury—a highly toxic form that bioaccumulates in fish. Wastewater treatment systems aren't designed to reduce mercury output. More than half of U.S. sewage sludge is disposed of by application to land, which can lead to soil and water contamination and potentially increasing air mercury concentration. Dr. Lars Hylander from Uppsala University

discussed the effectiveness of dental traps in reducing environmental contamination, sharing that they must be correctly installed and regularly maintained. He emphasized mercury-free alternatives would entail fewer environmental costs.

Supply sources, dental product suppliers, landfills, and human releases through burial and cremation are additional mercury environmental contamination pathways. Given the evidence of mercury's effect on human health and the environment, preventing unsafe release and eventually phasing out amalgam production, distribution, and use is imperative.

GOAL 2
EDUCATE PATIENTS AND EXPAND ACCESS TO MERCURY-FREE FILLING ALTERNATIVES

Action 1: Provide education to patients, especially for high-risk populations

Sylvia Dove shared results from an online Zogby poll of 1,508 adults revealing 57 percent of respondents were unaware mercury is amalgam's main ingredient. Only 11 percent of respondents (and 6 percent of African American respondents) were informed of this risk by their dentist. Dove stressed the importance of informing patients about mercury-containing fillings for several reasons. First, dentists should know patients' relevant medical history, as mercury exposure could be especially harmful for those with pre-existing conditions like kidney problems.

Second, awareness of amalgam's mercury content helps patients avoid additional mercury exposure from sources like fish or supplements and opt for mercury-free alternatives.

Sharon Lewis shared that of 398 dentist offices surveyed in Connecticut, none of the offices had displayed amalgam information sheets that are legally required in the state. Asserting that lack of information, especially in vulnerable populations, exacerbates health disparities, Lewis demanded that dentists comply with and regulatory agencies enforce the state law requiring patients to be informed.

A multi-sectoral approach to phasing out amalgam is essential, with patients at the forefront and the primary focus of interventions and continued for dentists and healthcare professionals.

Action 2: Expand research on mercury-free filling alternatives and access to these options

Participants debated whether feasible alternatives to amalgam really exist. For example, some questioned whether composite resins are as durable and affordable as amalgam. Participants agreed that more research focused on validating and improving mercury-free alternatives will encourage phasing out dental amalgam.

FDA representative Michael Adjodha shared information about the FDA's 2020 Safety Communication on dental amalgam. He emphasized that amalgam use is a decision made collaboratively between the patient and dental healthcare provider. The 2020 Safety Communication acknowledged that certain groups face a higher risk of adverse health effects from dental amalgam use. Consequently, the agency advises that high-risk groups—pregnant women, women planning pregnancy, nursing mothers, children, and individuals with pre-existing neurological conditions or kidney dysfunction—avoid dental amalgam whenever feasible and appropriate. Adjodha stated that the benefits of dental amalgam outweigh their risks for most patients and emphasized the importance of research as the agency continually reassesses these benefits and risks.

Dr. Michael Fleming, a dentist and FDA Medical Device Committee Consultant, asserted amalgam must be banned, stating, "There is no health concern where amalgam must be the solution." He has imposed an amalgam ban in his private practice for 42 years. Regardless of Minamata Convention exceptions regarding mercury-containing amalgam use, and given alter-native availability, his professional ethics make it "unconscionable" to use a filling material containing a universal endocrine and enzyme disrupter, potent neurotoxin, and environmental pollutant.

Dr. Fleming noted that while mercury-free composite costs have historically been 10-15 percent higher than amalgam, they are now approaching parity. Both Dr. Fleming and Dr. Hylander explained that amalgam's true financial burden far exceeds composites when additional costs of chair-side exposure controls, waste manage-ment requirements, and environ-mental and human health damages are considered. Dr. Hylander highlighted successful amalgam phase-out efforts in Sweden and asserted mercury-free fillings should always be the first alternative when considering restorative materials.

Dr. Peter Orris from the University of Illinois, Chicago advocated for expanding research on amalgam alternative safety and evidence-based public health inter-vention. He asserted that his research comparing health risks of dental amalgam and resin-based alter-natives shows that composite fillings are durable, that their environmental impact is small, and the associated health risks only arise in rare cases where patients have allergies to the composite materials.

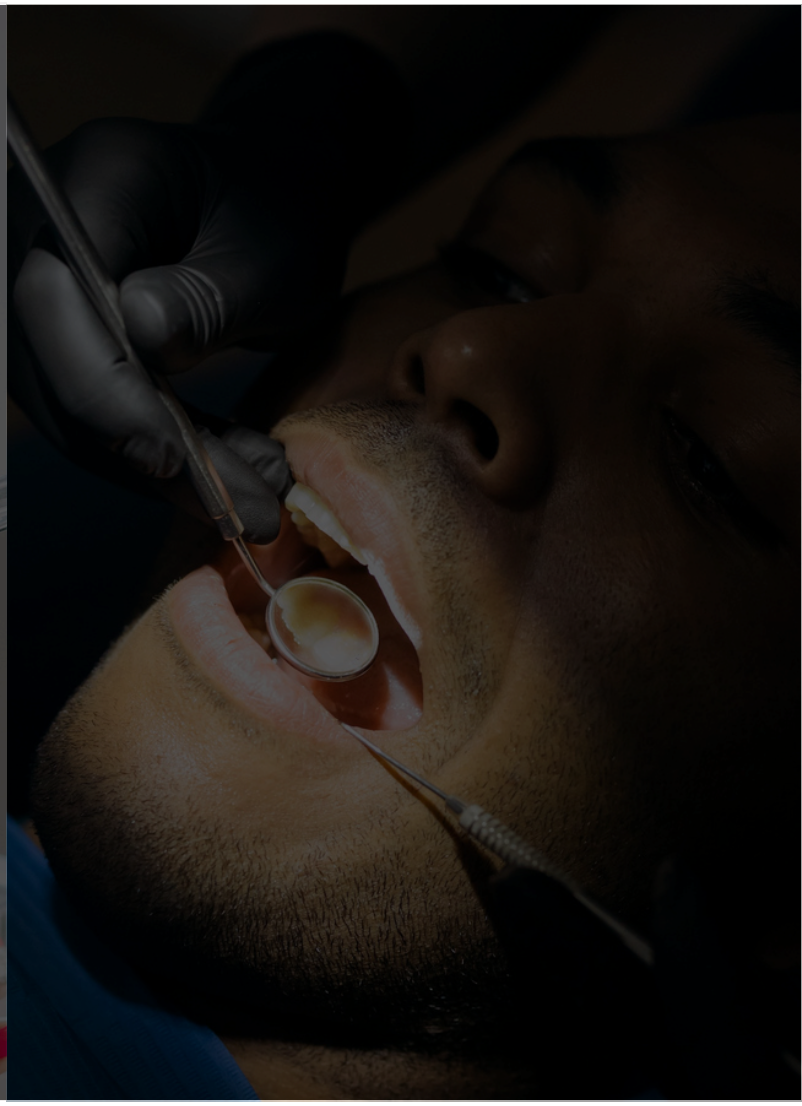
Some participants disagreed with relying on more research to identify alternatives. They asserted that if regulatory agencies phase out amalgam, the industry would innovate accordingly.

Anne Summers, a microbiologist at the University of Georgia, advocated for more research into how the body reacts to mercury and methods for detecting mercury exposure, claiming they are essential to understanding the relationship between mercury's effect on human microbiology and amalgam. Summers' research established that common human-associated bacteria can detoxify mercury compounds. In addition, amalgam can stimulate growth of mercury- and antibiotic-resistant oral and gut bacteria. She found 33 sites in 25 different human proteins that could serve as biomarkers for mercury exposure.

With effective alternatives, dental amalgam's continued use, especially in low-income communities and communities of color, is unjustifiable. Research can provide evidence that stakeholders such as dentists, regulatory agencies, and public health advocates can use to promote a transition from dental amalgam to mercury-free alternatives. Importantly, patients have a right to decide and be informed about their filling treatment.

CONCLUSION

Addressing mercury in skin lightening products and dental amalgam requires comprehensive, coordinated action across multiple sectors and levels of government. From strengthening international treaties and domestic regulations to expanding community education and health care systems, each action outlined in this report contributes to protecting vulnerable populations from mercury's devastating health effects. Success depends on recognizing these issues as matters of environmental justice, allocating adequate resources for enforcement and research, and centering the voices and needs of affected communities in all intervention strategies. Only through sustained collaboration, evidence-based policy, and commitment to equity can we eliminate the prevent-able harms caused by mercury-added products.



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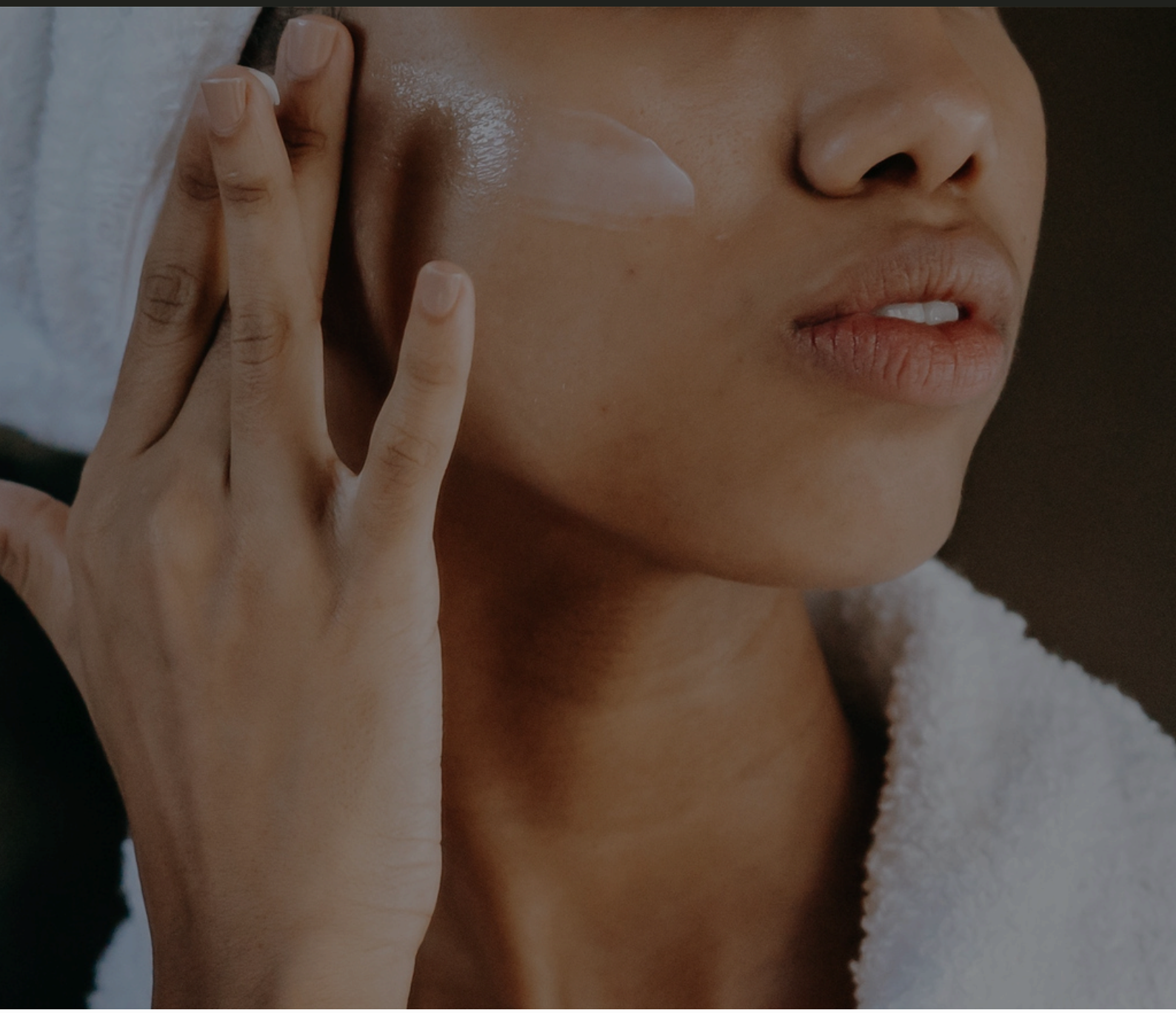

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