Pediatric Environmental Health Toolkit

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(Comments do not represent state of California)

Sustainability meeting UCSF June 2016
Parental Concern vs. Pediatrician Advice

Stickler GB, Simmons PS., Clin Pediatr 1995
Pediatric Environmental Health Toolkit Developed to Fill Need for Clinical Tools

- Developed by Boston and San Francisco PSR chapters, AAP chapters in Northern CA and MA, and UCSF Pediatric Environmental Health Specialty Unit (PEHSU)

- To enable pediatric and family care providers to routinely include in well-child visits, easily accessible information on preventing toxic exposures.
Provider and Patient Materials

Designed to be visually appealing and easy to use by busy practitioners.

For Providers:
- Key Concepts
- Laminated Reference Card
- Laminated Anticipatory Guidance pocket card

For Patients:
- RX for Prevention slips
- Magnets
- Posters (developed later)
Have a healthy home
Keep your house well-ventilated, free of dust and tobacco smoke.

Breastfeeding is best...
...for baby and mom. When possible, breastfeed. If you work outside the home, ask about ways to pump and store breast milk.

Get mad at mold
Water damage can encourage mold growth and may cause respiratory problems in children. To avoid mold growth, fix water leaks, and dry out the area. Remove and replace soaked carpets.

Don't use lice shampoo containing lindane
Ask your doctor about safer alternatives.

Feast on fruits and vegetables
Serve your child 5–6 portions a day of fruits and vegetables as part of a healthy diet.

Turn it down
Loud music can harm your hearing. Turn the volume down on your headphones and give your ears a rest.

Get active!
Encourage your child to exercise and limit TV and computer time.
¡Juegue a lo seguro!

Vigile el aire
Limite las actividades que su niño haga al aire libre cuando la calidad del aire sea mala. Busque los pronósticos de la calidad del aire en un periódico de su zona o en programas locales de radio o televisión.

El pescado es bueno para los niños, pero... algunos tipos de pescado contienen más mercurio. Los niños menores de 15 años no deben comer ningún tipo de pescado alto en mercurio, como pez espada, lofotil, tiburón, sierra o albacora enlatada (albacore "solid white" en inglés). Es mejor que coman gato o el atún enlatado conocido como "chunk light tuna." Siempre siga los avisos locales y estatales sobre el consumo de pescado.

Juegue a lo seguro
Esoja lugares para jugar que no estén hechos con madera tratada a presión, que puede contener sustancias químicas tóxicas. Si los niños juegan en plataformas o equipo de madera tratada con arsénico de cobre cromado (CCP, por la sigla de su nombre en inglés), láveles bien las manos después de que jueguen. Pregúntele a su médico cómo puede notar si la madera ha sido tratada a presión.

El trabajo y los pasatiempos
No se exponga a sustancias tóxicas en el trabajo o los pasatiempos (pintar, construir modelos, componer coches). Use productos de limpieza con menos toxinas, como espray de limpieza con alcohol.

Ambiente Sano
Niño Sano
Toolkit Pilot Tested, Results Positive

- A demographic mix of 17 pediatric and family practices in MA and CA, 34 providers

- Also included Pediatric Residency program at UCSF (approx 80)

Percent answering "somewhat" or "very confident"
- 68% before
- 93% after

Percent answering "adequate" or "more than adequate"
- 43% before
- 82% after

Change in provider self-efficacy (p < .01)
57% “less than adequate knowledge” to 18%

Change in provider self-rated knowledge (p < .01)
Toolkit Training Program Developed to Expand Knowledge and Use of Toolkit

Major goal achieved:
Toolkit Endorsed by the AAP

Training Programs in 5 States funded by the EPA OCHP
Toolkit Training Includes Curriculum with Case Studies

Example: *Occupational/Take Home Exposures*

- A day laborer seen in ER for work related injury.
- He is working on demolishing a firing range. Lead level obtained - 74 mcg/dl after 3 days on job.
- Four other workers tested between 57 and 98
- What should be done?

Hipkins KL, Materna BL, Payne SF, Kirsch LC., Clin Pediatri 2004
Case 5 - continued
Occupational/Take Home Exposures

✓ 9 children of three workers tested between 13 and 34 mcg/dl. (highest 18 month old)

✓ Wife of one with symptoms and Pb level of 36 mcg/dl.

✓ Workers may bring home hazards on clothing, shoes, and body.

✓ In 2001-2002 year, 22% of California childhood lead poisoning cases had potential contribution from occupational sources.
“Take-home” toxic exposures can be prevented by the following:

- Changing clothes at work;
- Showering before leaving work;
- Laundering work clothes separately;
- Removing shoes before entering the home, etc.

If hazardous substances are used by individuals working at home, care should be taken to keep the work and living areas separate – and hazardous materials must be stored and disposed of properly. Similarly, hobbies such as painting, model building, furniture refinishing, and auto repair often involve using toxic solvents. Pregnant and breastfeeding women, and children should avoid these exposures.
“Having worked with the toolkit, instead of saying that you put all your cleaning products up high on the shelves, I now talk about how, as you do this it would be a good idea to look and see if you have alternatives that are less toxic... knowing that your baby is going to be crawling on the floor where you use these. That kind of becomes an entrée to talk about it and gives people something concrete that they can do.”
Online CE course based on:
Pediatric Environmental Health Toolkit

Partners: UCSF PEHSU, ATSDR, Boston PSR

Or UCSF PEHSU
Online Course Features

Free 1.5 Continuing Education Credit Hours for:

• Physicians, Nurses, Nurse Practitioners, Health Educators

Features:

• Anticipatory guidance and environmental health
• Taking an environmental health history
• Environmental health case studies
• Animated stories
  • Nail salon, obesity and outdoor activity, mercury and fish
Greater than 90% concluded:

• Program met their goals
• Format was conducive to learning
• Overall quality was excellent
• As a result of completing the educational activity, it is likely that I will make changes in my practice.
Revision and Mobile Device App

• 15 sections
  – Developed by three PEHSU doctors (UCSF, U of Cincinnati, Mt. Sinai NYC) plus representative from PSR
  – Reviewed by PEHSU medical director and then each section by two or three PEHSU clinical staff
  – Reviewed by ATSDR
  – To be product of PEHSU network, ATSDR, PSR
  – Endorsement from AAP?
Phthalates
Endocrine-disrupting chemicals that give flexibility to soft plastics and PVC products, and stabilize color and fragrance in personal care products.

Health Effect Summary

Phthalates are man-made chemicals that affect the endocrine system through multiple mechanisms of action, including anti-androgenic activity. Emerging evidence suggests that prenatal exposure may increase the risk of certain behavior issues in early life, and may have adverse impacts on androgen-sensitive tissues (ex. genital development – anogenital distance).\textsuperscript{1, 2} Phthalate exposure in early life has been linked to increased rhinitis, eczema, wheezing, and asthma.\textsuperscript{3} Emerging evidence suggests prenatal exposure impacts neurodevelopment and behavior in children.\textsuperscript{4, 5, 6} In adults, phthalates may be associated with changes in sperm quality.\textsuperscript{7} Research on the impacts of phthalate exposure is still ongoing.
Sources and Routes of Exposure
Phthalates are chemicals added to some plastic products to make them more flexible (including polyvinyl chloride/PVC and soft plastics). They are also commonly used in fragrances, cosmetics (as color stabilizers), other personal care products (including lotions, perfumes, nail polish), and medical devices (IV tubing, time-release medications). Phthalates can be found in the food supply due to contamination from processing equipment such as conveyor belts and packaging.8

Since they are not strongly bound to the plastic structure, phthalates can leach out of a product as the plastic ages or is heated. As they leach out of the product, phthalates can be:
• Inhaled
• Ingested
• Absorbed through the skin
• Young children may also be exposed by putting phthalate-containing products in their mouth.5
• Since phthalates can cross the placenta and be excreted into breastmilk, young children can be exposed prenatally or through breastfeeding.9, 10
Regulation

In 2008, the Consumer Product Safety Act was passed, which banned several phthalate compounds (DEHP, DBP, and BBP) from children’s toys for children under age 12 and childcare items for children under age 3. There is also an interim ban on three additional phthalates (DINP, DIDP, and DnOP) in children’s toys that can be placed in the mouth or items that are used to facilitate sleep, feeding, or are used for teething. The European Union has banned all phthalates from children’s toys for children under age 3.
Prevention Strategies

1. Encourage patients to choose and use products wisely.
   When possible, purchase personal care products that are phthalate free (read the labels).
   Buy phthalate-free children’s toys or those approved by the European Union (read the labels).
   Choose unscented products whenever possible. Avoid products that list an added “fragrance,” since this generic term sometimes indicates phthalates.
   Do not use air fresheners in the home. Ventilation is preferred to get fresh air.
   If plastics cannot be avoided, choose wisely. Avoid plastics with the recycling code #3 (PVC), #6 (styrene) and #7 (BPA). For more information, click here for the Plastics guide from the PEHSU network.
   Do not heat plastics: do not put plastic products in the microwave or dishwasher.
   Avoid canned or processed foods- eat fresh!

2. Encourage pregnant and lactating women to minimize their exposure to phthalates.

3. For more information regarding cosmetics safety, the following web sites are useful:
   California Department of Health:  https://safecosmetics.cdph.ca.gov/search/
   Environmental Working Group:  http://www.ewg.org/skindeep/
   Campaign for Safe Cosmetics:  http://www.safecosmetics.org/