

Ayurvedic Supplements and Toxicity

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Ayurvedic medicine originated in India and has spread around the world. Its use in the West, including the United States, has been increasing, especially in alternative medicine circles. Ayurvedic medicines are herbal-based and fall into two general categories - 100 percent herbs and herbs processed with various metals or minerals, called rasa shastra.

In 2003, Robert Saper, MD, a Boston-based family doctor, had a patient whose seizures were caused by lead poisoning. When the source of the lead was traced to ayurvedic supplements, Dr. Saper led a team that analyzed 70 Ayurvedic products made in India and purchased locally. The findings were published.¹ Their paper led to the assumption that Ayurvedic products made in America would be safer, since 20 percent (14/70) of the supplements from India contained lead, mercury or arsenic.

Recently, Saper and colleagues did an extensive follow-up experiment.² [Findings are summarized in the tables at right.] This time, they tested American and Indian products. They randomly ordered 230 products from 25 different Web sites, receiving 193. (One seller refused to fill a 14-item order because of their 2004 study.¹ The remainder were out of stock and/or discontinued.)

Total Tested Products - 193					
Made in the U.S.	115	Pure Herb	158	Grown in India	168
Made in India	77	Rasa Shastra	32	Grown in the U.S.	1
Made in Canada	1	Unknown	3	Undetermined	24
Total	193		193		193

After they purchased the products, they categorized them in various ways, including: made in the United States or India, rasa shastra or pure herb, and where the herbs were grown. Next, all 193 products were measured for metals using X-ray fluorescence spectroscopy. The tested products included capsules, tablets, liquids, powders, pastes, oils and teas (the majority were capsules and tablets). Their results were as follows:

Contaminated Products - 40					
Made in the U.S.	25	Made in India	15	Total	40

The authors determined that 21.7 percent of the products made in the U.S. and 19.5 percent of the products made in India contained an excessive amount of lead, mercury, arsenic or a combination thereof. Although only 17 percent of the tested products were rasa shastra, they comprised 67 percent of the contaminated products from India. In contrast, 19 percent of U.S. rasa shastra supplements contained toxic metals. The problem (with the exception of the rasa shastra products from India) appears to be a farming issue, since both U.S. and Indian companies primarily use herbs grown in

India.

- *Side effects of lead:* Neuropathy; nausea; fatigue; dyspepsia; irritability; hearing loss; muscle pain; joint pain; hypertension; miscarriage; stillbirth; and reduced sperm count.
- *Side effects of mercury:* Paresthesias and neuropathy; itching; rashes; burning; weakness; hair loss; pink cheeks, fingertips and toes; sweating; hypertension; increased resting pulse; peeling of the skin, insomnia; and memory loss.
- *Side effects of arsenic:* Paresthesias; fatigue; easy bruising; corns and warts; swollen ankles; puffy face and eyelids; increased sweating; runny nose; watery eyes; headaches; depression; aggression; hair loss; and itching.

Contaminated Product Breakdown				
	Number	Lead	Mercury	Arsenic
Made in the U.S.				
Herbal	21	20	3	2
Rasa Shastra	4	4	0	1
Total	25*	24	3	3
Made in India				
Herbal	6	4	2	0
Rasa Shastra	9	9	3	0
Total	15*	13	5	0
*Some products had more than one contaminate.				

When a patient is taking Ayurvedic medicine, ask how they are feeling. If the answer is "no change" or "worse" since they've been using the supplement, remove the product and monitor their response. If the patient feels better after stopping the supplement, consider it contaminated until testing proves otherwise. Both U.S. and Indian companies should begin testing every batch of raw materials before they produce supplements. Rasa shastra products should be tested a second time after the herbs undergo the rasa process. Furthermore, I would expect ethical companies to begin screening immediately, rather than waiting until litigation or new regulation forces compliance. After all, if they don't care about their customers' health, they don't belong in health care. Hopefully, this problem will be rapidly resolved.

References

1. Saper RB, Kales SN, Paquin J, et al. Heavy metal content of Ayurvedic herbal medicine products *JAMA* 2004;292(23):2868-73.
2. Saper RB, Phillips RF, Sehgal A, et al. Lead, mercury and arsenic in U.S. and Indian-manufactured ayurvedic medicines sold via the Internet. *JAMA* 2008;300(8):915-23.

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