

# Warn Patients of Herbal Products'

## Contamination Risks

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Hello. I am Dr. Gerald Chodak for Medscape. Today I want to talk about an article by Newmaster and colleagues<sup>[1]</sup> in *BMC Medicine* that analyzed the content of several herbal products.

The investigators purchased 44 different over-the-counter herbal products containing a single entity, and they used a technique called "DNA barcoding" to analyze the contents of those products. They could be authentic, meaning that they contained exactly what was said on the label; they could be substitutions, meaning that they did not contain what was listed on the label and there was something else in place of it; or they could have contaminants, meaning that they contained some of the original product but also contained things that were not listed on the label. Lastly, fillers are things from wheat, rice, or soybean that were present in the product but not listed on the label.

What is disturbing about the findings is that 60% of the products did not contain exactly what was listed on the label. Although 48% did contain the active ingredient, one third of them also contained other contaminants. About 10%-15% contained products that were unrelated to what was listed on the label.

What does this mean? There are several issues here. Number one, it should sound an alarm for people who are taking supplements in the hope that they are getting what they are paying for. It also raises concerns for clinicians, because if your patient comes to you and asks whether it is okay to take product A or product B, you are going to be basing your decision on the stated ingredients on the product and whether they have any known interactions or complications with other medications that the patient is taking.

Obviously, the doctor cannot go out and do a field test to make sure that the product contains what is listed, but it does create a problem if doctors are in the position of having to tell their patients that it is okay -- that there is no known interaction or safety hazard. In fact, that may not be true, because some of the products do in fact cause side effects that will affect some patients more than others.

The bottom line is that this is a problem that needs addressing. The health food industry or the alternative food industry is going to argue that it shouldn't be regulated, but in fact there is a lot of abuse out there. A lot of mislabeling occurs, contamination occurs, substitution occurs, and fillers are placed inside without the patient being aware of them.

It would appear that this technique of DNA barcoding has a future and may offer an opportunity for economical testing of products. Until that occurs, patients and clinicians need to be aware that what they think they are buying may not be what they are getting at all, and that it may pose some health hazards to them. I look forward to your comments. Thank you.