

Food for Thought 2001: Quality Control of Supplement

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We live in an age of an exponentially expanding search in the plant and animal kingdom for substances to treat disease, protect us from environmental assault, and optimize our physiology. Health care professionals (and their patients) face an ever-increasing choice of substances to use. New products continue to enter the market at a pace that even experts find difficult to comprehend. Supplements like glucosamine and echinacea, once only sold through small companies catering to health care professionals and selected health food stores, can now be purchased in drug stores, supermarkets, discount retailers, and warehouse club stores. Many alternative practitioners (this author included) feel good when products we embraced years ago are now achieving mainstream recognition.

At the same time, the spotlight of acceptance for nutritional supplements continues to brighten, a malignancy driven by greed and fueled by freedom (i.e., minimal regulation) is spreading like wildfire. The problem I am speaking of is quality control. When a patient states that a certain supplement did not help, I always wonder if he or she was actually taking a pure, bioavailable product.

ECHINACEA		
Product	Phenolic Compounds	Cost per Pill Cents
American Fare Vita-Smart	4.5%	.12
Celestial Seasonings	2.3%	.27
Nature Made	1.1%	.17
Nature's Fingerprint	1.2%	.26
Nature's Herbs	2.5%	.10
Nature's Resource	1.1%	.07
Nature's Way	1.5%	.11
One-A-Day Cold Season	4.0%	.30
Rite Aid	1.6%	.05
Sundown Herbals	0.8%	.05
Sunsource Echinex	3.9%	.40
Your Life	3.2%	.18

Phenolic compounds should make up 4% of the echinacea claimed for each pill. Within brands, pills in different bottles had different strengths. Given the dosage difference among products there is a wide variation of how much phenolic compound a person may receive. For example, taking the recommended amount of One-A-Day would yield two milligrams of phenolic compounds per day. Following the directions for Nature's Herbs yields 90 milligrams of phenolic compounds per day. Source: Consumer Reports, March 1999.

Off-the-Shelf Studies

With the growing popularity of a wide variety of supplements and the impressive science behind them, consumer groups, the media and university scientists have begun to test nutritional products at an ever-increasing rate. An off-the-shelf supplement analysis study is exactly how it sounds. That is, researchers buy products off the same shelves as consumers, then test them to see if they meet label claims and how accurate these claims are. The studies do not test for bioavailability, which is another equally important (if not more important) issue. Furthermore, most products sold are marketed based on positive human trials. What the ads don't say is that the supplements in studies are pure, potent, bioactive and bio-available. As we will see, the same does not necessarily hold true for what your patients are able to purchase on a retail level.

In a recent issue of the *University of California Berkeley Wellness*

Letter,¹(<http://www.berkeleywellness.com>) the editors mentioned a recent saw palmetto investigation in which only 17 of 27 products met label claims. Last month we discussed that only five of 32 brands of chondroitin sulfate tested achieved label claims.² Included in the article are the findings of two recent off-the-shelf analyses. Please note that cost does not guarantee a better product.

Although herbals seem to have the most problems, vitamins and minerals are not immune. Consumerlabs.com, a privately financed testing company, found that four out of 26 vitamin C products did not meet label claims. In a large study of 136 brands of calcium supplement, two thirds exceeded 1.5 mcg of lead per serving.³

Testing Retail St. John's Wort Products				
Claimed Potency Mg./Pill	Tested Potency Mg./Pill	% of Label Claim	Cost Cents/Pill	Hypercin Cost Cents/Mg.
.90	.70	78.9	.22	.31
1.05	.53	50.5	.25	.47
.90	.69	76.7	.17	.25
.90	.79	87.8	.30	.38
.35	.46	140.0	.15	.36
.90	.20	22.2	.12	.60
.90	.81	90.0	.20	.25
.45	.09	20.0	.11	1.22
.90	.74	82.2	.09	.12

In August 1998, The L.A. Times bought nine brands of St. John's wort and took them to an independent laboratory. Flora Research of San Juan Capistrano tested the products. The potency was the average of three samples. Notice the wide range of values versus what the labels claimed. Hypercin is a key active compound. Source: Los Angeles Times, August 31, 1998.

It is this author's opinion that the burden of proof falls on all supplement companies and their marketers to prove that what they are selling meets both the label requirements and is bioactive. This should include full-disclosure labels; realistic dosing instructions, possible side effects; product expiration date; storage directions, and what to do if the products are exposed to unfavorable conditions.

References

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2. Andersen GD. Commonly asked questions of 2000. Dynamic Chiropractic volume 19, issue 1, January 2001.
3. Seelfo G, Flegal A. Lead in calcium supplements. Environmental Health Perspective. 108 (4); 309-313; April 2000

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