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Doctor's Corner

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Modified Citrus Pectin (MCP) and Mercury Cleansing Programs

Modified Citrus Pectin (MCP) is a dietary supplement derived from the peel and pulp of citrus fruit. MCP is mostly known for its positive effects on cellular health. Recently, however, clinical research on MCP has produced exciting results for its use as a gentle chelator (eliminator) of mercury and other heavy metals. Some of the expanding clinical applications for MCP include:

- Detoxification; reduction of heavy metal body burden
- Supports normal cholesterol levels
- Immunomodulation enhancement

The Problem with Mercury

Recent news on mercury is particularly concerning for the U.S. population. In March 2004 the EPA issued a press release reporting nearly all fish contained traces of mercury. Some samples contained levels high enough to harm an unborn baby or young child's developing nervous system. These findings prompted the EPA to issue a warning to women who may become pregnant, pregnant women and nursing mothers advising them to eat only two meals of fish per week that are thought to have lower levels of mercury.¹ In their most recent update (August 2004),

the EPA issued a warning that 1/3 of the nation's lakes and 1/4 of its river ways are contaminated with toxic levels of mercury and other contaminants, and warned pregnant women and children against consumption of fish from these sources. Additionally, a National Academy of Sciences panel definitively warned that some children who had been exposed to mercury while in the wombs of their mothers were at risk for becoming those children "who have to struggle to keep up in school and who might require remedial classes of special education."

The risk of mercury toxicity from fish has reached epidemic levels. Two studies have further spurred on the concerns of mercury toxicity, as they both found women to have mercury levels that are 8-10% above what is considered safe.^{1,2} Furthermore, women who ate more fish were found to have higher levels of mercury. Another source of mercury toxicity may be amalgam dental fillings.

Heavy metals, in conjunction with the abundant presence of environmental toxins and xenoestrogens, constitute a dangerous insult to the body through DNA damage, hormonal modulation, immune suppression, oxidative stress, and cellular irritation.

A New Application for MCP Use: Heavy Metal Detoxification

The standard western medical approach for removing mercury from the body to treat mercury toxicity is chelation. This procedure is performed with harsh chelators that can cause multiple side effects while potentially robbing the body of some of its essential nutrients. While this may be the routine and most beneficial procedure when facing a serious toxicity problem, are there other, gentler ways to reduce mercury levels?

Two recent clinical studies have found that MCP may be a promising new dietary solution for reducing heavy metal load. In one recent clinical study, MCP was administered to a group of volunteers, and baseline levels of their total body mercury burden were measured and then compared against levels after treatment with MCP (15 grams of PectaSol® daily) for four months. The results showed a significant average decrease (over 60%; $p=0.03$) in the total body mercury burden after treatment with MCP.³ In an earlier study, PectaSol® was given to patients and proven to increase urinary secretion of heavy metals such as lead, mercury, cadmium and arsenic.⁴ Both studies concluded that MCP may be a promising alternative to the harsher intravenous chelating therapies as MCP



was found to be both effective and free of any side effects.

How MCP Works as a Gentle Chelator

Pectins are natural gelling agents, binders, thickeners, and stabilizers in foods. They mostly consist of galacturonic acid and galacturonic-acid methyl esters with average molecular weights from 50,000 to 150,000 daltons. High-methoxy (HM) pectin has at least 50% DE (degree of esterification) or greater, while a low-methoxy (LM) pectin's DE is 50% or less. For systemic chelation of heavy metals, pectin is modified to a low molecular weight, and low-methoxy content.

My observation from using MCP as a detoxification agent in my clinic is that it works as a gentle chelator in the bloodstream and it is very useful for ongoing use. Because fish are still recommended as part of a healthy diet and an essential source of certain nutrients (essential fatty acids like DHA), mercury levels are also becoming a widespread health concern. It is a Catch-22 for dietary health. As the widespread environmental cleanup of mercury is unlikely in the short-term, the medical community should develop methods to treat toxicity or reduce high body levels of mercury body burden. One approach is the use of traditional and alternative medicine cleansing programs along with the use of dietary supplements such as MCP that may act as gentle chelators.

For chelation purposes, 5-15 grams of MCP should be taken per day depending on mercury levels for one

year. Maintenance at 2-5 grams per day thereafter is usually sufficient. In my practice, I use 15 grams per day or 15 grams per day in the first 3-5 days of the month and 5 grams per day for the remainder of the month. MCP is generally regarded as safe and is well tolerated. Reported side effects have been rare, but may include mild and transient gastrointestinal discomfort.

References:

1-CDC Press Release: Blood and Hair Mercury Levels in Young Children and Women of Childbearing Age—United States, 1999 (see:<http://www.cdc.gov/od/oc/media/mmwnews/n010302.htm#mmwr3>)

2-Schober, SE, Sinks, TH, Jones, RL et al. (2003) Blood mercury levels in US children and women of childbearing age, 1999-2000. *Journal of the American Medical Association*. 289(13):1667-74.

3-Eliaz, I. (2004) Modified citrus pectin (MCP) in the treatment of cancer. Paper presented at: *The American Chemical Society Annual Meeting*; Philadelphia, PA.

4-Eliaz, I. and D. Rode (2003). The effect of modified citrus pectin on the urinary excretion of toxic elements. Fifth Annual Conference of Environmental Health Scientists: Nutritional Toxicology and Metabolomics, University of California, Davis.

Isaac Eliaz, M.D., M.S., L.Ac., is a pioneer in the field of integrative medicine and founder of Better Health Publishing®, an education-based company that provides health care professionals, consumers and other interested parties with scientific research on integrative medicine. He is a respected author, clinical practitioner and frequent guest lecturer on integrative medical approaches to health, immune

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