

# Other Fibers

**COMMON NAME:** Wheat dextrin, inulin, calcium polycarbophil, methylcellulose, soluble corn fiber

## NOT RECOMMENDED - EVIDENCE

### LEVELS OF EVIDENCE



**Recommended:**

Several well-designed studies in humans have shown positive benefit. Our team is confident about its therapeutic potential.



**Recommended with Caution:**

Preliminary studies suggest some benefit. Future trials are needed before we can make a stronger recommendation.



**Not Recommended - Evidence:**

Our team does not recommend this product because clinical trials to date suggest little or no benefit.



**Not Recommended – High Risk:**

Our team recommends against using this product because clinical trials to date suggest substantial risk greater than the benefit.

### Evaluated Benefits

No evidence of efficacy or not indicated

## Source

- Wheat dextrin: Wheat dextrin/semi-synthetic/chemically altered wheat starch (the FDA considers methylcellulose semisynthetic because it has been changed from an insoluble fiber (cellulose) to a soluble fiber (methylcellulose). Wheat dextrin has been changed from a non-fiber (starch) to a soluble fiber, and therefore is even more of a semisynthetic nature. Since the dextrinization process for wheat dextrin is incomplete, a significant percentage remains starch, which is readily converted in the small bowel to sugar.
- Inulin: Extracted from onions and by-products of sugar production from beets or chicory root.
- Calcium polycarbophil: a synthetic polymer of polyacrylic acid cross-linked with divinyl glycol, with calcium as a counterion.
- Methylcellulose: Chemically altered wood pulp (cellulose), designated as a semisynthetic fiber by the FDA.
- Soluble corn fiber: Enzymatic hydrolysis of cornstarch.

## Indications/Population

Noneffective.

## Mechanism of Action

- Bile is normally taken up in the ileum and recycled up to several times during a meal. Given that cholesterol is a major component of bile, increasing bile acid elimination via stool leads to reduced serum cholesterol concentration, mostly low-density lipoprotein (LDL), as the liver uses serum cholesterol to synthesize more bile. The higher the viscosity of the fiber, the potentially greater the effect on cholesterol lowering. None of the listed fibers provide this effect. Nonviscous wheat dextrin had no effect on LDL or total cholesterol.
- A head-to-head placebo-controlled study of psyllium versus calcium polycarbophil versus methylcellulose showed that psyllium significantly lowered LDL and total cholesterol versus placebo, while methylcellulose and calcium polycarbophil had no effect.
- Methylcellulose is viscous but not gel-forming, so it would not be expected to provide cholesterol lowering, which is a gel-dependent phenomenon.
- Polycarbophil is a gel-forming synthetic polymer, but the marketed version is a calcium salt to prevent gelling (choking hazard). Preclinical and clinical data support that the calcium does not dissociate, leaving the polycarbophil inert/non-gelling.
- Wheat dextrin is soluble and nonviscous.
- Inulin is soluble and nonviscous.
- Calcium polycarbophil is soluble and viscous but does not dissipate well, according to literature.
- Methylcellulose is soluble and viscous.
- Soluble corn fiber is soluble and nonviscous.

## Side Effects

Wheat dextrin is constipating.

## Dosing

Per each manufacturer's recommendation

## Drug Interactions/Cautions

May interfere with medication absorption.

Choking hazard with some of the gelling brands in this category. Thus these have no benefit for heart health and only risk.

## References

Anderson JW, Floore TL, Geil PB, O'Neal DS, Balm TK. Hypocholesterolemic effects of different bulk-forming hydrophilic fibers as adjuncts to dietary therapy in mild to moderate hypercholesterolemia. *Archives of Internal Medicine*. 1991; 151(8): 1597–1602.

Chutkan R, Fahey G, Wright WL, McRorie J. Viscous versus nonviscous soluble fiber supplements: Mechanisms and evidence for fiber-specific health benefits. *Journal of the American Academy of Nurse Practitioners*. 2012; 28(4): 476–487. doi: [10.1111/j.1745-7599.2012.00758.x](https://doi.org/10.1111/j.1745-7599.2012.00758.x)

McRorie JW, Fahey G. Review of gastrointestinal physiology and the mechanisms underlying the health benefits of dietary fiber: Matching an effective fiber with specific patient needs. *Clinical Nursing Studies*. 2013; 1(4): 82–92. doi: <http://dx.doi.org/10.5430/cns.v1n4p82>

McRorie JW, Pepple S, Rudolph C. Effects of fiber laxatives and calcium docusate on regional water content and viscosity of digesta in the large intestine of the pig. *Digestive Diseases and Sciences*. 1998; 43(4): 738–745.

McRorie, JW Jr. Evidence-based approach to fiber supplements and clinically meaningful health benefits, part 1: What to look for and how to recommend an effective fiber therapy. *Nutrition Today*. 2015; 50(2): 82–89. doi: [10.1097/NT.0000000000000082](https://doi.org/10.1097/NT.0000000000000082)

McRorie, JW Jr. Evidence-based approach to fiber supplements and clinically meaningful health benefits, part 2: What to look for and how to recommend an effective fiber therapy. *Clinical Nutrition*. 2015; 50(2): 90–97. doi: [10.1097/NT.0000000000000089](https://doi.org/10.1097/NT.0000000000000089)