Barley

What We Know

› Barley is a small, oval-shaped grain with a nutty flavor that has contributed to the human diet for at least 10,000 years. Historically known as the food of athletes and gladiators, barley has earned nutritional accolades as a “super food.” It is a rich source of phytonutrients, niacin, thiamin, zinc, manganese, copper, selenium, and soluble and insoluble fiber. The nutritional benefits of barley consumption are vast, including lowering cholesterol and blood pressure, slowing the absorption of glucose and stabilizing blood glucose levels, increasing satiety and bowel regularity, and protecting against cancer. Barley is available in hulled kernels, flakes, grits, pearls (i.e., a form of barley that is polished in a process that removes the bran layer, decreasing nutrition), and ground flour. Although all of the forms of barley are excellent dietary sources of fiber and nutrients, hulled kernels of barley are the most nutritionally valuable.[2,5,6,9,10,15]

› Action of barley[2,5,6,7,9,10,13]

• The soluble fiber in barley is called beta-glucan. Benefits of beta-glucan include that it
  –binds with water and slows the digestive process, which allows the body to better manage postprandial (i.e., after eating) glucose and insulin responses
  –increases the volume of intestinal contents, which hinders the absorption of cholesterol. The added bulk of barley also promotes more regular bowel movements, which improves intestinal health
  –increases bile acid excretion into the intestines, which results in lower serum cholesterol levels because bile acids contain oxidized cholesterol
• Colonic flora (i.e., “good” bacteria) is able to use some of the soluble fiber from barley to form short-chain fatty acids, which can promote intestinal health and may help to resolve abnormalities in the intestinal mucosa in persons with conditions such as ulcerative colitis
• Barley has been shown to lower blood pressure
• Barley is a good source of the phytonutrients known as lignans, the most notable of which is 7-hydroxyxymatairesinol
  –Lignans are metabolized by the flora in the colon to form enterolactone and enterodiol, which have estrogen-like effects. Increasing serum levels of enterolactones may help to protect against hormone-dependent cancers such as breast and prostate cancer

› Recommended dosage and administration[2,10]

• The United States Food and Drug Administration (FDA) recommends 3 or more grams of soluble fiber intake per day. One cup of cooked pearled barley (the most commonly sold form) provides 3 grams of soluble fiber

› There are no adverse reactions or contraindications reported in the literature for barley
› There are no known adverse interactions of barley with medications

› Recent research findings on barley[1,3,4,8,11,14]

• Scientists studied the effects of consuming Tibetan hull-less barley on diet-induced metabolic syndrome in rats. Results revealed that the rats that were fed Tibetan hull-less barley had less weight gain, dyslipidemia, and insulin resistance than those that were not fed the barley. Researchers suggest that these results indicate that Tibetan hull-less barley can serve as a functional food that can prevent metabolic syndrome caused by high-fat and high-sucrose diets.[8] Another study was conducted on overweight
women to compare the effects of following a diet that included whole-grain barley and legumes to consuming a diet of similar macronutrient composition but lacking legumes and barley. Researchers report that the barley- and legume-containing diet resulted in reduced levels of different cardiometabolic disease-related markers, indicating that following this type of diet can help to prevent cardiometabolic diseases\(^{(14)}\).

Numerous studies have been conducted to determine the benefits of barley consumption in relation to the prevention or management of diabetes mellitus, type 2 (DM2). Studies demonstrated that the consumption of barley porridge improves postprandial glycemic response and that the regular intake of white rice combined with barley can play a role in the prevention of DM2 and other metabolic diseases\(^{(12,13)}\). Researchers also found evidence that consumption of barley-derived beta-glucan as an ingredient in a beverage may improve insulin sensitivity in individuals with hyperglycemia\(^{(3)}\).

Scientists have noted that barley intake improves lipid metabolism and bowel function. Results of a meta-analysis of 11 studies indicate that barley consumption is associated with significant lowering of total and LDL cholesterol levels. Further study results revealed similar results, suggesting that the inclusion of barley in the diet could be an effective strategy for lowering blood cholesterol and improving lipid profiles in both men and women\(^{(1,4,11)}\).

**What We Can Do**

› Become knowledgeable about the physiologic effects of barley so you can accurately assess your patients’ personal characteristics and health education needs; share this information with your colleagues

› Educate your patients about the health benefits of incorporating barley into their diets, and ways to do so

**Related Guidelines**

Barley February grain of the month. Whole Grains Council website.
Coding Matrix
References are rated using the following codes, listed in order of strength:

- M Published meta-analysis
- SR Published systematic or integrative literature review
- RCT Published research (randomized controlled trial)
- R Published research (not randomized controlled trial)
- C Case histories, case studies
- G Published guidelines
- RV Published review of the literature
- RU Published research utilization report
- QI Published quality improvement report
- L Legislation
- PGR Published government report
- PFR Published funded report
- PP Policies, procedures, protocols
- X Practice exemplars, stories, opinions
- GI General or background information/texts/reports
- U Unpublished research, reviews, poster presentations or other such materials
- CP Conference proceedings, abstracts, presentation

References


