

Bromelain – Helps Relieve Minor Pain, Swelling, and Inflammation

About Bromelain

- Bromelain is a digestive enzyme found in the stems (and fruit) of pineapples. It is classified as a proteolytic enzyme, meaning it helps with the digestion of protein.
- Bromelain functions as a plant-based digestive enzyme over a broad pH range. It is often used as a digestive aid and to support gastrointestinal health.^{1,2}
- Unlike some proteins that are completely broken down during digestion, bromelain has been shown to be absorbed intact and is still enzymatically active in the blood. This is why it has more systemic effects, in addition to assisting with protein digestion.³
- One of the key characteristics of bromelain is its anti-inflammatory effects. It has been shown to be a potent anti-inflammatory agent, inhibiting the production of many different inflammatory signals.⁴⁻⁶
- Many of bromelain’s anti-inflammatory and analgesic properties have been recognized to support musculoskeletal health by reducing pain and improving function.
- Several clinical trials for mild-to-moderate knee osteoarthritis, for example, suggest that bromelain has similar efficacy to standard therapy, reducing stiffness and pain while improving joint function.^{7,8}
- Bromelain has also been used to help speed recovery from many minor traumas, including soft tissue injuries, inflammation, swelling, and bruising.⁹⁻¹²

How to Use Bromelain

- Take 1 capsule per day with food or as directed by a health care practitioner. Consult a health care practitioner for prolonged use.

Cautions and Contraindications

- Consult a health care practitioner prior to use if you are pregnant or breastfeeding, are taking anticoagulant agents, anti-inflammatory agents, or antibiotics, have gastrointestinal lesions/ulcers, or are having surgery. Some people may experience gastrointestinal discomfort/disturbances. Stop use if hypersensitivity/allergy occurs. Keep out of reach of children. Should be used with caution in individuals with a pineapple allergy.¹³

Drug Interactions

- Bromelain has been reported to increase the concentration of several antibiotics, potentially increasing their effectiveness.¹⁰ Theoretical interactions with anticoagulant medications exist, though none have been substantiated.¹⁴

Quick Tips for Optimal Health

- Protein digestion begins in the mouth and continues in the stomach and small intestine. Many symptoms related to poor digestion, such as bloating and fullness after a meal, may be attributed to poor protein breakdown. There are many possible contributing factors to poor protein digestion, including age, stomach pH, the type of protein consumed, and more.¹⁵
- A number of lifestyle factors can also influence protein digestion. For example, acute exercise may impair protein digestion, so avoiding eating protein-rich meals right after exercising may be beneficial.¹⁶
- Many medications, including antacids and proton pump inhibitors, may raise the pH of the stomach and impair normal protein breakdown.¹⁵
- Taking longer to chew food into smaller pieces is an often overlooked component of protein digestion that has been shown to improve protein breakdown.¹⁷
- The Mediterranean diet, which is rich in olive oil, fruit, vegetables, nuts, and cereals, has been associated with greater musculoskeletal health. This is characterized by a higher bone mineral density, fat-free mass, and lower fracture risk.¹⁸
- Following a musculoskeletal injury, maintaining at least normal caloric and protein intake should be attempted, as the muscle protein synthesis needed for repair can be energy intensive.¹⁹
- In addition to bromelain, other anti-inflammatories, such as omega-3 fatty acids (especially EPA), may help minimize exercise-related muscle damage.²⁰
- Alternative modalities, such as acupuncture, may help provide pain relief for knee osteoarthritis.²¹

PATIENT NAME: _____

PRACTITIONER NOTES:

PRACTITIONER CONTACT INFORMATION:

References

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