# Bromelain

<table>
<thead>
<tr>
<th>THERAPEUTICS</th>
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<tbody>
<tr>
<td><strong>Brands</strong></td>
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<tr>
<td>• Ananase</td>
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<tr>
<td>• NatuRelief</td>
</tr>
<tr>
<td>• Others</td>
</tr>
<tr>
<td><strong>Generic</strong></td>
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<tr>
<td>• Bromelain (pineapple extract)</td>
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<tr>
<td><strong>Class</strong></td>
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<tr>
<td>• Anti-inflammatory, pain supplement. It is a nutrapharmaceutical agent that is sold over-the-counter without a prescription</td>
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<tr>
<td><strong>Used for</strong></td>
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<tr>
<td>Possible beneficial effects in:</td>
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<tr>
<td>• Pain management, arthritic – inflammatory pain</td>
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<tr>
<td><strong>How the Drug Works</strong></td>
</tr>
<tr>
<td>Still undetermined; bromelain may affect migration of neutrophils to sites of acute inflammation</td>
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<tr>
<td><strong>How Long until It Works</strong></td>
</tr>
<tr>
<td>Undetermined. Bromelain can be used in short treatment cycles for acute inflammatory pain or arthritic pain</td>
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<tr>
<td><strong>If It Works</strong></td>
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<tr>
<td>Short treatment cycles can be repeated</td>
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<td><strong>If It Doesn’t Work</strong></td>
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<tr>
<td>Alternative supplements, anti-inflammatories, or analgesic medications as per physician’s recommendations</td>
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<tr>
<td><strong>Best Augmenting Combos for Partial Response or Treatment-Resistance</strong></td>
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<tr>
<td>In combination with current analgesic agents</td>
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<td><strong>Tests</strong></td>
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<tr>
<td>Undetermined</td>
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## How Drug Causes AEs
- **Life-Threatening or Dangerous AEs**
  - Bromelain is possibly safe for most people when taken in appropriate amounts. Limited published information on safety

## Weight Gain
- Undetermined, but unlikely

## What to Do about AEs
- Determine if the GI AEs disappear over time, otherwise discontinue bromelain; for nausea, trial of proton pump inhibitors

### ADVERSE EFFECTS (AEs)
- Anecdotally, nausea and other GI disturbances have been reported. Bromelain may also cause allergic reactions, especially in people who are allergic to pineapple, wheat, celery, papain, carrot, fennel, cypress pollen, or grass pollen

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## DOSING AND USE

### Usual dosage
- The FDA has not established a recommended dosage for bromelain. The product is sold as a nutritional supplement, not a medication. Bromelain can be taken 2 or 3 times a day between or before meals. In Germany, where bromelain is used to reduce swelling after surgery, reportedly the standard dose given to patients is 80–320 mg/day

### Dosage Forms
- It varies according to preparations

### How to Dose
- May be taken 2 or 3 times a day. Bromelain is most effective when taken on an empty stomach

### Overdose
- Unknown

### Long-Term Use
- Recommended to be taken in cycles

### Habit Forming
- Unknown, but unlikely

### How to Stop
- No need for tapering schedule
**Pharmacokinetics**
- Unknown

**Drug Interactions**
- Might impair effects of amoxicillin and tetracyclines
- Might impair coagulation, and might increase bruising and bleeding when taken with aspirin, clopidogrel (Plavix), NSAIDs, dalteparin (Fragmin), enoxaparin (Lovenox), heparin, ticlopidine (Ticlid), and warfarin (Coumadin)

**SPECIAL POPULATIONS**

**Renal Impairment**
- Undetermined

**Hepatic Impairment**
- Undetermined

**Cardiac Impairment**
- Reportedly, bromelain supplementation may affect heart rate

**Elderly**
- Reportedly well tolerated

**Children and Adolescents**
- Not recommended in neonates and young children

**Pregnancy**
- Unknown about safety of bromelain during pregnancy

**Breast-Feeding**
- Not recommended

**THE ART OF PAIN PHARMACOLOGY**

**Potential Advantages**
- Adjuvant, in combination with current analgesics

**Potential Disadvantages**
- Unknown

**Primary Target Symptoms**
- Can be a nutritional supplement in patients with osteoarthritic pain

**Pearls**
- Reportedly, for osteoarthritic knee pain best benefit when combined with trypsin and rutin (Phlogenzym). This combination may be as effective as some prescription painkillers
- In experimental animal models of colitis, 6 months of dietary bromelain decreased the severity of colon inflammation
BROMELAIN (continued)

Suggested Reading


