



**Characteristics of Best-Selling
Topical Pain Relief Medications
at Major Online Retailer**

Aaron Burshtein, MD, Michelle Liu, MD
Icahn School of Medicine at Mount Sinai

INTRODUCTION

Topical analgesics are a common formulation for targeting joint and muscle pain. The purpose of this study was to assess characteristics of the best-selling topical pain relief medications at a major online retailer.

METHODS

Cross-sectional study. Amazon.com searched “Pain Relief Medications and Treatments”. Results sorted by “Best Seller.” 50 best-selling products collected.

RESULTS

- The median price for a medication was \$16.86 (\$5.99-\$39.99)
- The median price/ounce was \$4.24 (\$1.49-\$20.00)
- Average consumer rating: 4.4/5 (avg 7,564 consumer reviews)
- The ‘Joint and Muscle’ category contained 78% of the products, the next highest being ‘Arthritis’ (12%)
- Predominant vehicle type: Cream (76%) then gel (6%)
- Most abundant active ingredients were menthol (38%), arnica (28%), 4% lidocaine (18%), and camphor (10%)
- 66% were natural, 16% were lidocaine, and 10% contained non-steroidal anti-inflammatory drugs
- Only 26% contained an FDA-approved ingredient
- Top marketing claims: non-greasy (52%), maximum strength or powerful (42%), natural/plant-derived (32%), deep penetrating (22%), fragrance/odor free (20%), long-lasting (16%), soothing (14%), targets nerves (14%), fast-acting (12%), and doctor-recommended (10%)

Many **affordable** topical analgesics with high ratings

Consumers value **“creams”**

Most products contain diversity of ingredients that are **not FDA-approved**



Average Consumer Rating
4.4

