

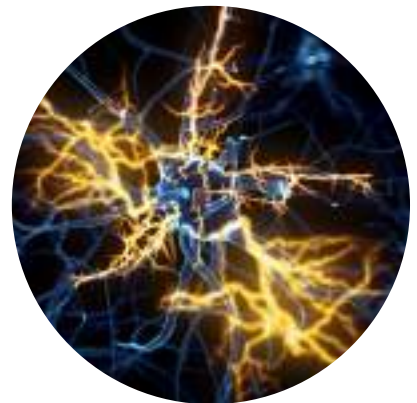
Osteoarthritis



Fibromyalgia



Nerve Pain

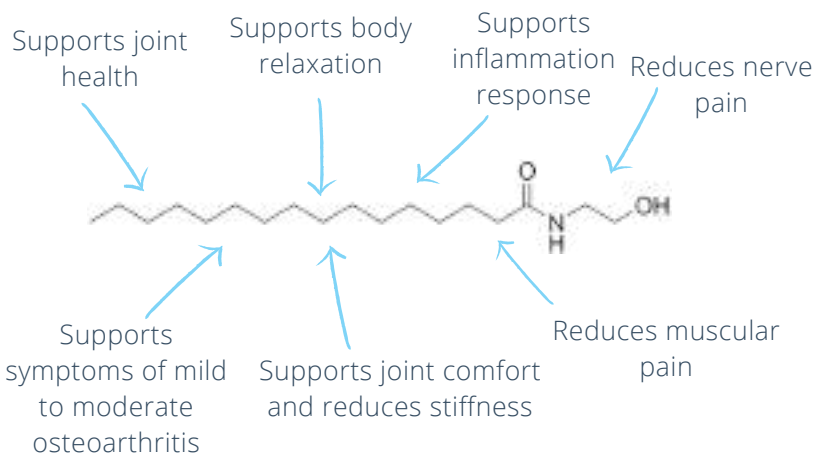


Joint Pain





## BENEFITS OF LEVAGEN+™



### Palmitoylethanolamide (PEA)

Levagen+™ contains Palmitoylethanolamide, an endogenous fatty acid amide belonging to the endocannabinoid family which is naturally produced in the body around various tissues as a biological response to stress, pain and inflammation.

PEA is an active lipid that acts on the cannabinoid receptor CR2 and is used to treat joint pain and sports related inflammation. It was first identified in 1957 from foods such as peanuts, egg yolks, and soybeans.

It can be difficult for the body to produce PEA at the site of pain or injury on demand as we age. Levagen+™ provides the body with a bioactive form of PEA to aid with healthy inflammation responses and reduce pain.

Levagen+™, chemically known as palmitoylethanolamide (PEA), is a group of fatty acid amides that supports joint health and pain relief.

Levagen+™ is a cold water absorbable PEA powered by LipiSpurse® technology to increase bodily uptake and enhance functionality.

 **Dosage:** 150mg once a day

### Potential Areas for Use

- Osteoarthritis
- Back Pain
- Dental Pain
- Fibromyalgia
- Carpal tunnel syndrome
- Muscular Cramps
- Chronic Pain
- Nerve Pain

### Levagen+™ Added Benefits

- Improved functionality
- Cold water dispersible
- Higher active load
- Increased bioavailability
- Proper particle dispersion

### Applications

- Tablets
- Capsules
- Powders
- Functional Beverages & Foods

## Clinical Evidence

21 human clinical trials have been conducted on the benefits of Levagen+™ for sports nutrition and healthy ageing<sup>2</sup>.

### PEA for Knee Osteoarthritis<sup>3</sup>:

A double-blind, placebo controlled study involving 111 test subjects researched the effects of PEA on adults with mild to moderate knee osteoarthritis and found that the group taking PEA had significant reductions on the WOMAC<sup>4</sup> and NRS<sup>5</sup> pain score scales compared to those taking placebos.

### Levagen+™ for exercise recovery in healthy males<sup>6</sup>:

A double-blind, placebo controlled study researched the effects of Levagen+™ on healthy males aged 18-35. Test subjects took part in physical exercise to induce muscle fatigue 30 minutes after taking Levagen+™, then again post-workout and one daily for the following three days.

Results showed that the group taking 150mg of Levagen+™ had reduced lactate and muscle damage compared to the group taking placebos. Researchers correlated the reduced muscle damage to improved performance, allowing test subjects to have higher intensity exercise routines for longer.

### LipiSpurse® increased absorption<sup>1</sup>:

A clinical study conducted on groups taking Levagen+™ and standard PEA found that the group taking the Levagen+™ supplement had significantly increased plasma PEA absorption rate, 1.7 times that of the group taking standard PEA.

## LipiSpurse® Technology

Standard PEA does not dissolve well in water, which can limit its efficiency and bioavailability in aqueous environments such as the stomach.

Levagen+™ is developed with Pharmako Biotechnologies' LipiSpurse® Technology, specially designed to increase the active ingredients' bioavailability and solubility in water.

In aqueous environments, LipiSpurse® enhanced active particles can freely disperse, which enhances its absorption in the body's natural digestive process.



Typical powder =  
poor dispersion

LipiSpurse® enhanced  
powder =  
optimum dispersion

1



Repelling forces between the particles prevent agglomeration or aggregation, allowing powders to have proper particle dispersion.

1 Pharmako Biotechnologies

2 <https://www.nutraingredients-usa.com/News/Promotional-Features/Brands-considering-Levagen-PEA-in-addition-to-CBD-as-uncertainty-around-CBD-continues>

3 Steels, E., Venkatesh, R., Steels, E. et al, (2019). A double-blind randomized placebo controlled study assessing safety, tolerability and efficacy of palmitoylethanolamide for symptoms of knee osteoarthritis. *Inflammopharmacol*, 27(475). doi:10.1007/s10787-019-00582-9

4 Western Ontario McMaster Universities Osteoarthritis Index

5 Numerical Rating Scales

6 <https://gencorpacific.com/featured-ingredients/levagen>

**Lipa Pharmaceuticals** began in 1995 as a small family business with a firm belief that our success could only be measured by the growth and success of our customers.

We are now **Australia's first choice for complementary medicines manufacturing** and have won Seven prestigious Manufacturer of the Year awards by the sectors Industry Association – Complementary Medicines Australia.

As a contract manufacturer for Australia's biggest vitamin brands, **our extensive services offer full supply chain management from product concept to market launch.** This includes but is not limited to Product Development, Regulatory and Compliance Support, Research and Development, Quality Management, Stability Programs, Manufacturing and Packaging Solutions.

## INGREDIENT

Levagen+™

## RECOMMENDED DAILY DOSE

150mg a day

## TARGETS

- Arthritis
- Joint Function and Comfort
- Post-Exercise pain
- Workout Endurance
- Pain Management

## CONTAINS

Palmitoylethanolamide (PEA) powered by LipiSpense® Technology



**LIPA** PHARMACEUTICALS  
*Where new ideas grow*

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