

# Maca

## Applications

- Men's Sexual Health
- Women's Sexual Health
- Energy Support
- Antioxidant Support



## Introduction

**NutraMedix Maca** is a hydro-ethanol extract made from maca root (*Lepidium meyenii*). It is also known as *Lepidium peruvianum*. *L. meyenii* belongs to the Brassicaceae family and is native to the Peruvian Andes, in locations 4,000 meters above sea level.<sup>1,2</sup> Common names include maca, ayak chichira, and Peruvian ginseng, though it is botanically unrelated to true ginseng.<sup>1</sup> Maca has been widely used since the time of the Incas, and is traditionally used for energy, sexual health support, and hormonal support.<sup>2</sup>

Maca contains rich macronutrient content, including 59% carbohydrates, 10% protein, 8% fiber, and 2% lipids.<sup>3</sup> Maca contains vitamins A, B2 and B6;<sup>4</sup> minerals such as calcium, copper, iron, potassium, and zinc;<sup>2</sup> and an assortment of essential amino acids and essential fatty acids.<sup>2</sup> It also contains valuable secondary metabolites such as macamides, glucosinolates, and macaenes.<sup>2,3,5,6</sup> Macamides are unique to maca; glucosinolates are found in various members of the Brassicaceae family, and macaenes are found in an assortment of plant families.<sup>3</sup>

**NutraMedix Maca** is made at our U.S. manufacturing facility using a specialized proprietary extraction process that optimizes the constituents of the herbs in their original, unprocessed state to obtain broad-spectrum concentration. Because our extracts are made in our own facility, we control all aspects of quality, including stringent

ID testing, microbial testing, and heavy-metal testing. NutraMedix rigorously follows current good manufacturing practices (cGMP), as do our suppliers.

## Sexual Health Support

### For Men

**Maca root** (*L. meyenii*) may help with men's sexual health support.\* In a double-blind, placebo-controlled trial, 69 men interested in supporting healthy fertility were randomly assigned to 2 grams of maca or a placebo, daily for 12 weeks. While there were no differences in semen volume, sperm motility, or sperm morphology between groups, individuals in the maca group experienced significant support for healthy sperm concentration compared to placebo.<sup>7</sup>

In a double-blind, placebo-controlled, parallel trial, 56 male participants ages 21-56 were randomly assigned to 1,500 mg of maca, 3,000 mg of maca, or a placebo, daily for 12 weeks. Evaluation occurred at baseline, 4 weeks, 8 weeks, and 12 weeks. Beginning with the 8-week evaluation, the maca group experienced significant support for healthy sexual desire independent of serum testosterone or estradiol levels, compared to the placebo group.<sup>8,9</sup>

In a randomized, double-blind clinical trial, 50 men interested in supporting healthy erectile function were randomly assigned to maca 2,400 mg of maca per day or a placebo. While

both groups experienced significant support for the mental aspects of normal erectile function, the improvement was more significant for the maca group than for the placebo group.\* In addition, compared to placebo, only maca showed significant support for the physical and social aspects of erectile function.\* Researchers concluded that maca supports a subjective perception of healthy sexual and general well-being.\*<sup>10</sup>

In a horse study, stallions were supplemented with maca for 60 days. The stallions experienced significant support for both normal sperm concentration and healthy sperm count, attributed in part to the maintenance of sperm motility and acrosome integrity already within the normal range.\*<sup>11</sup>

### For Women

**Maca root** (*L. meyenii*) may help with women's sexual health support. In a crossover study with 14 healthy postmenopausal women ages 50–60, participants were given 3.5 grams of maca powder or a placebo, daily for 6 weeks. Blood was drawn at baseline, 6 weeks, and 12 weeks. Though there were no changes to hormone levels [estradiol, follicle-stimulating hormone (FSH), luteinizing hormone (LH), and sex hormone-binding globulin (SHBG)], the women experienced significant support for a healthy menopause experience, including normal sexual function and a healthy mood.\* Researchers concluded that the menopausal support was independent of estrogenic or androgenic activity.\*<sup>12</sup>

In a double-blind, randomized pilot dose-finding study for maca root, 17 women, average age of 36, were given 1.5 grams or 3.0 grams daily of maca. Compared to the 1.5 gram group, the 3.0 gram group experienced significant support for normal libido and healthy sexual function.\*<sup>13</sup>

One crossover study with 29 postmenopausal women showed that maca may offer additional support beyond sexual health.\* The participants were given 3.3 grams of maca or a placebo daily for 12 weeks. At baseline, 6 weeks, and 12 weeks, both groups underwent blood tests measuring levels of hormones such as estradiol, FSH, SHBG, and thyroid stimulating hormone (TSH) levels; as well as glucose, lipid, and cytokine levels. Though there were no hormonal differences between

groups, when compared to the placebo group, participants in the maca group experienced significant support for maintaining systolic and diastolic blood pressure already within the normal range, as well as support for a healthy mood.\*<sup>14</sup>

## Energy Support

**Maca root** (*L. meyenii*) may help with energy support, including at high altitude.\* In a small human study, 10 high-altitude athletes were given 1,500 mg of fresh maca for 60 days. Oxygen consumption during high-altitude physical activity was measured at baseline, and again at 60 days. Compared to baseline, the maca-supplemented athletes experienced significant support for both treadmill speed and maximum oxygen intake.\*<sup>15</sup>

In a small crossover, placebo-controlled study, trained male cyclists were randomly assigned to take 2,000 mg of maca root extract powder or a placebo daily for 14 days, with exercise capacity measured at baseline and after maca supplementation. Compared to baseline, the maca-supplemented cyclists experienced significant support of exercise performance while the placebo-supplemented cyclists did not, though there were no significant differences between post-supplementation maca or placebo groups.\*<sup>16</sup>

In mice, a maca aqueous extract helped support energy during exercise, which included supporting both grip strength and endurance as well as maintaining reactive oxygen species (ROS), blood lactic acid (BLA), blood urea nitrogen (BUN), and NAD<sup>+</sup>/NADH already within the normal range.\*<sup>17</sup>

In a network pharmacology study, researchers found that maca has multiple targets for energy support.\* The researchers cited a study in which maca-supplemented mice experienced significant energy support during exercise and attributed this to maca-supported benefits for gastrointestinal microbiota.\*<sup>18</sup>

## Antioxidant Support

**Maca root** (*L. meyenii*) may help with antioxidant support.\* Maca extract as well as its constituent glucosinolates, macamides, and macaenes, have been shown to support the endogenous

antioxidant system as quantified by DPPH assay.<sup>3,19,20</sup> The alkamide macamides and glucosinolates are known to contribute antioxidant support.<sup>5</sup>

In one study, mice given maca polysaccharide by oral gavage had greater support for maintaining SOD, catalase (CAT), lactate dehydrogenase (LDH), and lipid peroxidation (LPO) already within the normal range, with antioxidant support attributed to flavonoids, alkaloids, and polysaccharides.<sup>21</sup>

In a rat study, maca helped maintain liver superoxide dismutase (SOD), blood glutathione peroxidase (GPx), and liver glutathione (GSH) already within the normal range.<sup>22</sup>

In a horse study, stallions were given maca powder for 60 days, with redox status measured at baseline and 30, 60, and 90 days. The stallions experienced significant support for normal oxidant capacity as measured by the OXY-adsorbent test,

healthy thiol levels evaluated by the -SHp test, and healthy reactive oxygen species metabolite levels as quantified by the (BAP) test.<sup>5</sup>

## Safety and Cautions

**Maca root** (*L. meyenii*) has been consumed safely as a root vegetable for over 3,000 years.<sup>1</sup> It is generally well-tolerated, Headaches and mild gastrointestinal effects are rare, but possible.<sup>3</sup> There are no currently known drug interactions with maca.<sup>1</sup> Laboratory studies have shown estrogenic effects associated with maca, and individuals with hormone-sensitive conditions should avoid use.<sup>20</sup>


Safety is not documented in breastfeeding or pregnant women, or in children under age 3, due to insufficient safety research.

\*This statement has not been evaluated by the Food and Drug Administration. This product is not intended to treat, cure, or prevent any diseases.

## References

- <sup>1</sup>NatMed Pro. (2023). Maca [monograph]. <http://naturalmedicines.therapeuticresearch.com>
- <sup>2</sup>Kasprzak, D., Jodłowska-Jedrych, B., et al. (2018). *Current Issues in Pharmacy and Medical Sciences*, 31(3), 107-112.
- <sup>3</sup>Ulloa Del Carpio, N., et al. (2024). *Frontiers in Pharmacology*, 15, 1360422.
- <sup>4</sup>Minich, D.M., Ross, K., et al. (2024). *Nutrients*, 16(4), 530.
- <sup>5</sup>Tafari, S., Cocchia, N., et al. (2019). *Molecules*, 24(10), 1981.
- <sup>6</sup>Zhou, Y., Li, P., et al. (2017). *Scientific Reports*, 7, 44660.
- <sup>7</sup>Alcalde, A.M., & Rabasa, J. (2020). *Andrologia*, 52(10), e13755.
- <sup>8</sup>Gonzales, G.F., Córdova, A., et al. (2002). *Andrologia*, 34(6), 367-372.
- <sup>9</sup>Gonzales, G.F., Córdova, A., et al. (2003). *The Journal of Endocrinology*, 176(1), 163-168.
- <sup>10</sup>Zenico, T., Cicero, A.F., et al. (2009). *Andrologia*, 41(2), 95-99.
- <sup>11</sup>Del Prete, C., Tafari, S., et al. (2018). *Andrology*, 6(2), 351-361.
- <sup>12</sup>Brooks, N.A., Wilcox, G., et al. (2008). *Menopause*, 15(6), 1157-1162.
- <sup>13</sup>Dording, C.M., Fisher, L., et al. (2008). *CNS Neuroscience & Therapeutics*, 14(3), 182-191.

- <sup>14</sup>Stojanovska, L., Law, C., et al. (2015). *Climacteric*, 18(1), 69-78.
- <sup>15</sup>Ronceros, G., Ramos, W., et al. *Anales de la Facultad de Medicina*, 66(4), 269-273.
- <sup>16</sup>Stone, M., Ibarra, A., et al. (2009). *Journal of Ethnopharmacology*, 126(3), 574-576.
- <sup>17</sup>Zhu, H., Xu, W., et al. (2021). *Food & Function*, 12(7), 3132-3141.
- <sup>18</sup>Zhu, H., Wang, R., et al. (2022). *European Journal of Pharmacology*, 917, 174758.
- <sup>19</sup>Carvalho, F.V., Fonseca Santana, L., et al. (2021). *Food Chemistry*, 364, 130453.
- <sup>20</sup>Valentová, K., Buckiová, D., et al. (2006). *Cell Biology and Toxicology*, 22(2), 91-99.
- <sup>21</sup>Fei, W., Zhang, J., et al. (2022). *Nutrients*, 14(20), 4264.
- <sup>22</sup>Vecera, R., Orolin, J., et al. (2007). *Plant Foods for Human Nutrition*, 62(2), 59-63.



**SHAKE WELL BEFORE EACH USE:**  
Take 20-30 drops two to three times per day.  
Do not use if pregnant or nursing. Stop use if adverse reactions develop.  
Keep out of reach of children.

\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.



7 28650 05302 2



**MACA**

**ANTIOXIDANT/SEXUAL  
HEALTH SUPPORT†**

**Dietary Supplement**

2 oz. (60 mL)

**Supplement Facts**  
Serving Size: 30 drops  
Servings Per Container: 40

Amount Per Serving	% Daily Value
Maca root extract	1.5mL*
*Daily Value not established	

**Other ingredients:** water, ethanol (20-24%)

**NutraMedix**  
Jupiter, Florida 33458 USA  
[www.nutramedix.com](http://www.nutramedix.com)  
561-745-2917

**Lot #**  
**Exp.**