



JUVEN® is clinically shown to help rebuild lean body mass in patients with cancer.¹

Reverse. Rebuild. Rejuvenate.



JUVEN increases lean body mass (LBM) without fat gain¹

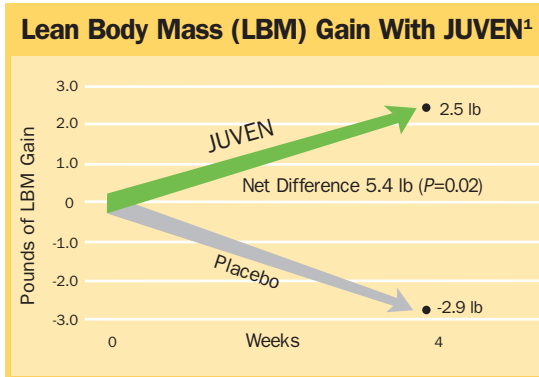


Chart developed from information in May PE et al: *Am J Surg* 2002;183:471-479.

In this double-blind study, patients (N=49) with advanced solid tumors (stage IV) and >5% weight loss were randomized to receive JUVEN BID or a nitrogen content-matched nutrient mixture BID.

- JUVEN patients gained more LBM despite taking in fewer calories and less protein*¹
 - 32% fewer calories/day than the control group (1487 Cal/day vs 2169 Cal/day)
 - 34% fewer grams of protein/day than the control group (62 g/day vs 94.5 g/day)
- JUVEN patients continued to gain LBM throughout the 24-week study¹

JUVEN combines HMB[†] with other important LBM-building nutrients

Only JUVEN has a patented blend of ingredients that uniquely work to prevent concurrent wasting while building LBM, effectively targeting the two key contributors to weight loss.

- **HMB** reverses muscle breakdown and increases protein synthesis^{2,3}
- **Arginine** supports protein synthesis and improves nitrogen balance^{4,5}
- **Glutamine** supports protein synthesis and preserves muscle glutamine^{6,7}

Refreshing flavors, rejuvenating results

Great-tasting orange and grape flavors help ensure patient adherence with JUVEN.

- Two packets a day, administered orally or as a modular tube feeding
- Dissolves easily in water or juice
- Well tolerated

*Reported in dietary intake questionnaire after first 4 weeks.

¹Data analyzed by ITT repeated measures ANOVA and adjusted using baseline observation as a covariate. The quadratic contrast of treatment on time was significantly different over the 24 weeks (P=0.02).

[†]β-hydroxy-β-methylbutyrate.

Rebuilding Muscles. Rebuilding Lives.™





Help Reverse Loss and Rebuild LBM With JUVEN.¹

Lean body mass plays a vital role for people with cancer

Loss of LBM is one of the most frequent causes of morbidity and mortality in patients with cancer.⁸

- Increased production of cytokines causes metabolic abnormalities that manifest as a rapid loss of lean mass⁹
- Proteolysis-inducing factor (PIF) is a specific marker for cancer-related loss of muscle⁹

The following complications have been associated with loss of LBM¹⁰:

Loss of LBM	Complications	Associated Mortality
10%	Decreased immunity, increased infections	10%
20%	Decreased healing, weakness, infection	30%
30%	Too weak to sit, pressure ulcers, pneumonia, no healing	50%
40%	Death, usually from pneumonia	100%

- Using JUVEN to rebuild lean body mass at an earlier stage in the disease may improve tolerance to chemotherapy treatment¹

JUVEN: Fresh new look, same scientific formulation

Even if you don't recognize the package, you'll recognize the clinical results you get when you recommend JUVEN for your patients.



Reverse Muscle Breakdown. Build LBM. Recommend JUVEN.

JUVEN is conveniently available for your patients:

- At Rite Aid, Duane Reade®, and Longs Drugs
- Online at www.juven.com
- By calling 1-877-GO-JUVEN (1-877-465-8836)
- By ordering via a pharmacy

References: **1.** May PE, Barber A, D'Olimpio JT, et al: Reversal of cancer-related wasting using oral supplementation with a combination of β-hydroxy-β-methylbutyrate, arginine, and glutamine. *Am J Surg* 2002;183:471-479. **2.** Smith HJ, Wyke SM, Tisdale MJ: Mechanism of the attenuation of proteolysis-inducing factor stimulated protein degradation in muscle by β-hydroxy-β-methylbutyrate. *Cancer Res* 2004;64:8731-8735. **3.** Smith HJ, Mukerji P, Tisdale MJ: Attenuation of proteasome-induced proteolysis in skeletal muscle by β-hydroxy-β-methylbutyrate in cancer-induced muscle loss. *Cancer Res* 2005;65:277-283. **4.** Kirk SJ, Hurson M, Regan MC, et al: Arginine stimulates wound healing and immune function in elderly human beings. *Surgery* 1993; 114:155-160. **5.** Pan M, Choudry HA, Epler MJ, et al: Arginine transport in catabolic disease states. *J Nutr* 2004;134(suppl):2826S-2829S; discussion 2853S. **6.** Kadowaki M, Kanazawa T: Amino acids as regulators of proteolysis. *J Nutr* 2003;133(suppl 1):2052S-2056S. **7.** Holeček M: Relation between glutamine, branched-chain amino acids, and protein metabolism. *Nutrition* 2002;18: 130-133. **8.** DeWys WD, Begg C, Lavin PT, et al: Prognostic effect of weight loss prior to chemotherapy in cancer patients. *Am J Med* 1980;69:491-497. **9.** Tisdale MJ: Biochemical mechanisms of cellular catabolism. *Curr Opin Clin Nutr Metab Care* 2002;5:401-405. **10.** DeSanti L: Involuntary weight loss and the nonhealing wound. *Adv Skin Wound Care* 2000;13(suppl 1):11-20.

USE UNDER MEDICAL SUPERVISION. Use JUVEN as part of a complete, balanced diet. Product protected under US Patents 5,348,979 and 6,031,000.

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