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Memorial Sloan Kettering
Cancer Center

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Studies of HMB to prevent or reverse cancer-related muscle-wasting is limited and results are mixed.

HMB is a breakdown product of the amino acid [leucine](#). Along with amino acids [arginine](#) and [glutamine](#), these compounds are generally known to prevent or slow damage to muscle cells that occurs with intense exercise or in advanced cancers and AIDS. However, many of the findings stem from laboratory and animal studies, in healthy volunteers, or in athletes. Although more studies in elderly and ill patients have recently been conducted, only a few were in cancer patients, and those results are mixed.

What are the potential uses and benefits?

- To prevent or reverse cancer- or HIV-related weight loss and weakness
There is limited research in these populations with conflicting results. Although two small studies in cancer patients showed some benefit, a larger study did not. Future trials should evaluate long-term safety and effects.
- To increase muscle mass
There is limited research in clinical populations and results are mixed. In addition, meta-analyses currently suggest that any benefits with HMB supplementation are small. Additional studies are needed.
- To improve strength and endurance in athletes
Clinical trials show mixed results regarding this use.

What else do I need to know?

Special Point:

- HMB stimulates a cell signal pathway called mTOR. Certain cancer drugs and immunosuppressants block this action and

may reduce the effect of HMB. It is unclear if taking HMB would also interfere with these drugs.

- HMB may alter lab results for cholesterol levels, including “bad” LDL cholesterol.

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

HMB - Last updated on January 13, 2021

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