



## OPTIONS CENTER HEALTH TOPIC



### PROTEIN

How much protein do you need? Begin by looking in the left column below and select your ideal body weight. Protein requirements for most people should fall between the Medium and Typical columns. A good rule of thumb is to eat protein (grams) to match your ideal bodyweight.

#### DAILY PROTEIN SUGGESTIONS:

Ideal Weight	Medium .5gm/lb	Typical 1gr/lb
80 lbs.	40 gr.	80 gr.
100 lbs.	50 gr.	100 gr.
120 lbs.	60 gr.	120 gr.
140 lbs.	70 gr.	140 gr.
160 lbs.	80 gr.	160 gr.
180 lbs.	90 gr.	180 gr.
200 lbs.	100 gr.	200 gr.
220 lbs.	110 gr.	220 gr.

Where can you get this much protein? Eat whole foods such as meat, fish, eggs, and poultry. If you don't have time for a protein-rich meal, then use a protein powder. Vegetarians tend to need protein powders desperately since complete proteins are usually lacking in their diet.

#### WHY USE WHEY PROTEIN?

This protein, made from milk, is a by-product of cheese-making. About 20% of the protein in milk is whey and 80% is casein. A filtering step converts it to a pure protein.

Whey Protein is one of the highest quality proteins on earth. The Biological Value is 104, higher than all other animal proteins.

Whey Protein is good for lactose-sensitive people. It digests fast; won't leave you feeling full.

Whey Protein supports immune health from certain protein components.

Whey Protein is high in branched chain amino acids, important to dieters since BCAAs can be used for fuel, potentially sparing muscle tissue.

### PROTEIN QUALITY RATINGS:

Whey protein tops the list as the best quality protein due to its specific amino acid array. Lower quality vegetable proteins are at the bottom of the list due to low levels of one or more essential amino acids.

#### RATING METHOD:

Protein Source	B.V.	P.E.R.	N.P.U.	PDCAAS
Whey Protein	104	3.6	92	1.00
Whole Egg	100	3.8	94	1.00
Beef	80	2.0	73	.92
Casein (milk)	77	2.9	76	1.00
Soy	74	2.1	61	.99
Rice	59	2.0	57	.26
Beans	49	1.4	39	.68

**B.V.** (Biological Value) is the proportion of absorbed protein that is retained in the body for maintenance and/or growth. The highest score of 100 was given for the best protein at the time – egg. However, whey protein came along and proved to be even better than egg.

**P.E.R.** (Protein Efficiency Ratio) is the gain in body weight divided by the weight of the protein consumed.

**N.P.U.** (Net Protein Utilization) is the proportion of protein intake that is retained (calculated as BV times Digestibility).

**PDCAAS** (Protein Digestibility Corrected Amino Acid Score) is based on the amino acid requirements of humans. A protein scoring of 1.0 indicates it meets all the essential amino acid requirements of humans according to the Food Agriculture Organization and World Health Organization. However, it does not take into account surplus amino acids some proteins have that could compensate for lower levels in another protein, like beans.

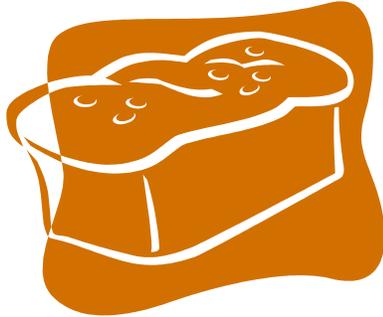
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## WHEY IN THE BALANCE

In a recent study, whey [protein powder] increased insulin and reduced blood sugar levels in type 2 diabetics, resulting in better energy balance. Insulin regulates blood sugar levels. Type 2 (non-insulin-dependent) diabetes is technically not a disease but the consequence of exercising too little and eating too much refined carbohydrates.

In the study, 14 subjects with type 2 diabetes (insulin resistance) ate a typical high-carbohydrate breakfast of white bread followed by a high-carbohydrate lunch of mashed potatoes and meatballs. **On one day, researchers added 27.6 grams of whey [protein] powder mixed in water to both meals.** On another day, participants ate the same meals, adding lean ham and, instead of the whey supplements, a placebo of lactose dissolved in water.



On all days, researchers took blood samples before, during, and four hours after breakfast, and three hours after lunch. Insulin production was 31% higher after breakfast and 57% higher after lunch on whey days compared to placebo days and blood sugar levels were 21% lower after the whey lunch compared to the placebo lunch. These results suggest that type 2 diabetics may be able to better control blood sugar by using a whey supplement at mealtimes.

In order to understand the impact of food on blood sugar, nutritionists are using the *glycemic index (GI)*, which measures how quickly different foods increase blood sugar levels. Foods with a high GI score tend to break down quickly and release sugar into the bloodstream in one big burst rather than more slowly and steadily over a longer period of time. Nutritionists believe that eating fewer refined carbohydrates and sugars, exercising more, and taking a regular vitamin supplement lowers risk for adult-onset diabetes.

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