

CHART III: PROTEINS RICH IN VITAMINS B₁ and B₂, CALCIUM AND IRON

FOOD - 100 gram serving	MEASURE	CALORIES	PROTEIN	A	C	B ₂	B ₁	CALCIUM	IRON	
PROTEINS RICH IN B₂ and CALC.										
COTTAGE CHEESE	100g	5 1/2 tblsp	95	19.5	20	0	.31	.02	96	.3
CHEDDAR CHEESE	"	4 slices 1/8" x 3x3	398	25.0	1400	0	.42	.02	873	1.0
SWISS CHEESE	"	"	370	27.5	1450	0	.40	.01	925	.9
EGGS	"	2 eggs	162	12.8	1500	0	.37	.10	54	2.7
MILK whole fluid cows	"	3/8 cup	68	3.5	195	2	.18	.04	118	.1
PROTEINS RICH IN B₁										
CORN-ON-THE-COB	168g	1 ear 6"	100	3.2	468	10	.12	.13	6	.7
RICE whole brown	100g	1/2 cup dry	360	7.5	50	0	.05	.32	39	2.0
WHEAT whole	"	"	344	12.7	0	0	.15	.55	46	3.8
OATS	"	1 1/3 cups dry	392	14.2	0	0	.14	.61	53	5.0
WALNUTS	"	1 cup halver	654	15.0	30	3	.13	.48	83	2.1
CASHEWS	"	3/4 cup	578	18.5	0	0	.19	.63	46	5.0
PROT. RICH IN B₁ and IRON										
MUNG BEANS	100g	1/2 cup	340	23.9	300	5	.17	.56	145	7.8
CHICK PEAS	"	1/2 cup	359	20.8	trace	2	.17	.55	92	7.1
LIMA BEANS	"	2/3 cup	333	20.7	0	2	.18	.48	68	7.5
PEANUTS	"	3/4 cup	559	26.9	0	0	.16	.30	74	1.9
BAKED POTATO	132g	1 med.	100	2.5	21	18	.05	.11	13	0.8
PROT. RICH IN B₂, B₁, CAL. & IRON										
NON-FAT DRIED MILK	100g	3/4 cup	362	35.6	40	7	1.96	.35	1300	.6
ALMONDS	"	7/8 cup	597	18.6	0	trace	.67	.25	254	4.4
WHEAT GERM	"	1 1/2 cups	361	25.2	0	0	.80	2.05	84	8.1
LENTILS	"	1/2 cup	339	24.0	570	5	.24	.56	34	7.4
PINTO BEANS	"	1/2 cup	343	23.1	0	2	.23	.61	163	6.9
PEAS dried split	"	1/2 cup	344	24.5	370	0	.28	.77	33	5.1
SOYBEANS	"	1/2 cup	329	34.9	110	trace	.31	1.07	227	8.0
BREWERS' YEAST	"	"	249	36.9	0	0	5.45	9.69	106	18.2

Calculation of Minimum Daily Requirement of the Essential Amino Acids

Essential Amino Acids	min. mg/Kg body wt.	70 Kg =	1,806 grams
Leucine	25.8 x	70	1,806 grams
Isoleucine	35.0 x	70	= 2,450
LYSINE	20.2 x	70	= 1,414
Phenylalanine	23.7 x	70	= 1,659
Tyrosine	13.3 x	70	= .931
Methionine	5.9		
Cystine	8.1		
TOTAL SULFUR	14.0 x	70	= .980
THREONINE	19.5 x	70	= 1,365
TRYPTOPHAN	4.7 x	70	= .329
Valine	29.8 x	70	= 2,086

CHOOSING COMPLEMENTARY PROTEINS

The next three charts show the pattern of the "limiting" amino acids of important proteins in bar graph form so that you can make quick estimates of quantities and proportions.

Each entry is based on a 100 gram portion (roughly 1/2 cup dry volume) divided by the M. D. R. for a 70 Kg man.

Cereals, Nuts, and eggs are comparatively rich in the S amino acids, but deficient in Lysine. They are listed in Chart IV.

In a complementary fashion, Legumes, Milk, and cheeses are rich in Lysine, but deficient in the Sulfur-Containing amino acids. They are listed in Chart V.

If we combine a cereal with a legume we get a more efficient "balanced" protein (i.e., the combined amino acid values are all equally close to the requirement). Thus, in selecting your protein choose a cereal, nut, seed, or egg from the "S-rich" Chart IV to combine with a legume, milk, or cheese from the second "LY-rich" Chart V. Since there are about 15 entries in each chart there are 225 (15 x 15) possible combinations of proteins. Obviously we cannot show all 225. Instead we have worked out a few examples in Chart VI, and included the Protein Efficiency Ratios (P. E. R.) Chart VII, which shows the most efficient proportions for several combinations.