



VLCKD overview and focus on efficacy, safety and right nutrients intake

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Il "mondo" della chetosi

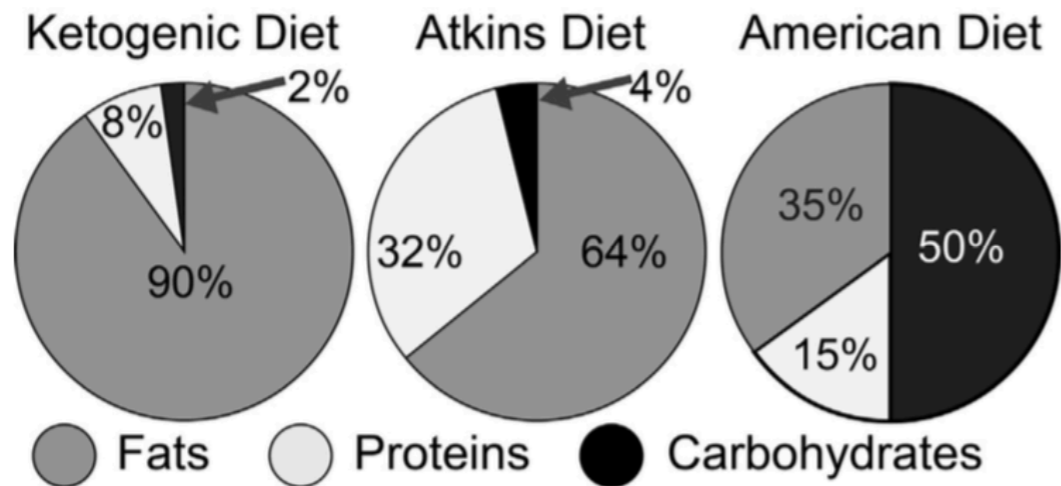


Fig. 1. Comparison of the caloric composition of the ketogenic diet, Atkins diet, and American diet. On any given day Americans consume an average of 265 g of carbohydrates (50% of total calories), 78.3 g of total fat (35% of total calories), and 78.1 g of protein (15% of total calories). Using percentage of total calories, these values are consistent with current 2010 United States Department of Agriculture recommendations that call for 45–65% of total calories from carbohydrate, 20–35% of total calories from fat, and 10–15% of total calories from protein (80).

Ketogenic diets as an adjuvant cancer therapy: History and potential mechanism

Bryan G. Allen^{*1}, Sudershan K. Bhatia¹, Carryn M. Anderson, Julie M. Eichenberger-Gilmore, Zita A. Sibenaller, Kranti A. Mapuskar, Joshua D. Schoenfeld, John M. Buatti, Douglas R. Spitz, Melissa A. Fath

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A. Ketogenic Diet Schema



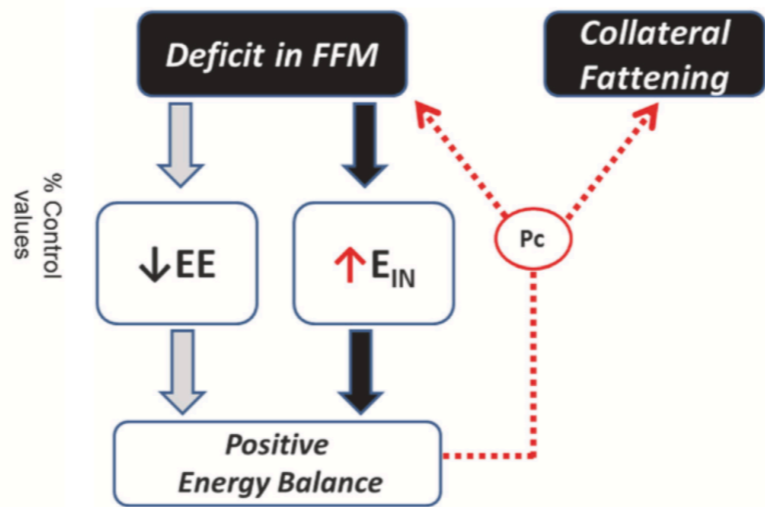
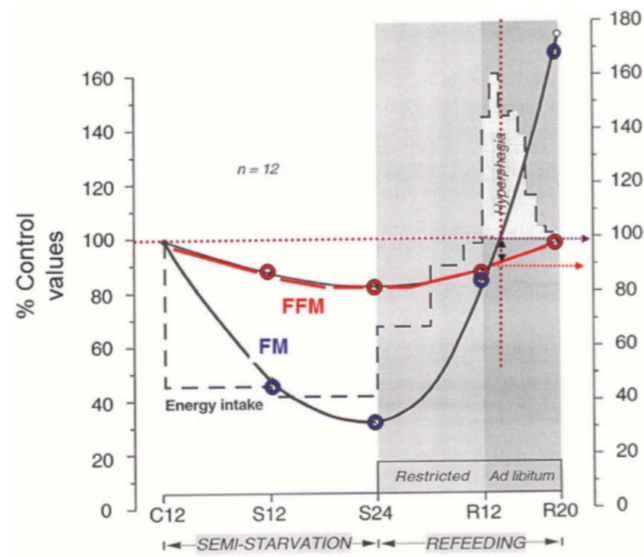
B. Typical Ketogenic Diet Plan

Course	Example	Energy, kcal	Fat, g	Protein, g	Carbohydrates, g
Breakfast	Crêpes Carb-free hot cocoa	555	54.8	11.0	2.7
Lunch	Bun-less hamburger with mustard mayo dip Chocolate frosted cupcake Low-carb milk	550	53.7	11.1	3.7
Snack	Pineapple keto-cal shake	525	52.6	11.0	2.4
Dinner	Taco salad Low-carb milk	760	75.7	15.1	3.2
Total (% daily energy)		2390	236.8 (90%)	48.2 (8%)	12.0 (2%)

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Collateral fattening in body composition autoregulation: its determinants and significance for obesity predisposition



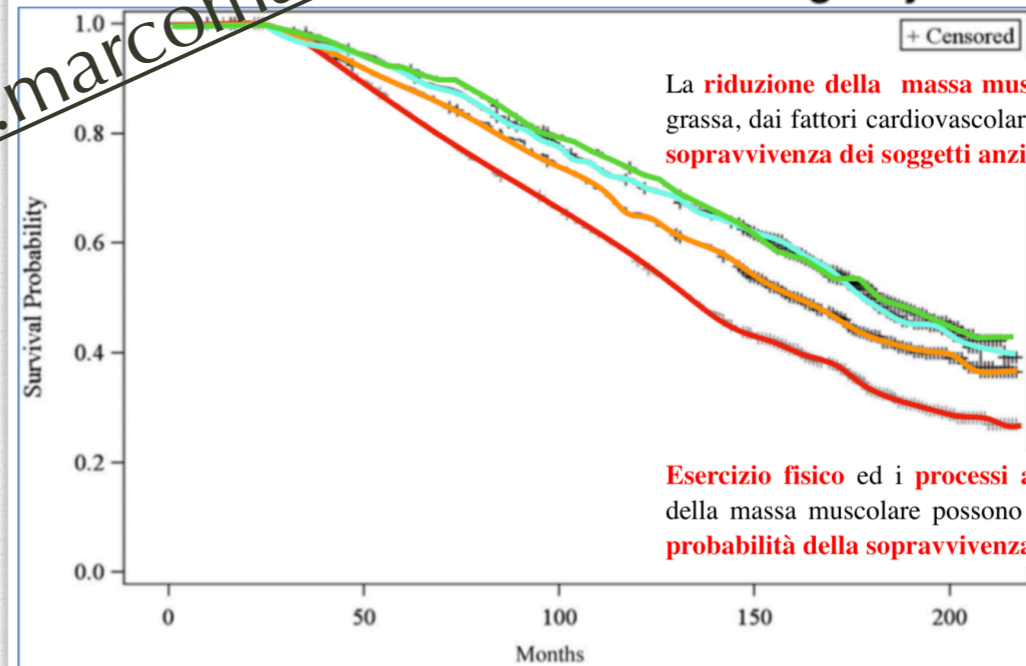
European Journal of Clinical Nutrition (2018) 72:657-664

Minnesota Starvation Experiment

Abdul G. Dulloo¹ · Jennifer L. Miles-Chan¹ · Yves Schutz¹

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Muscle Mass Index as a Predictor of Longevity in Older-Adults



La **riduzione della massa muscolare** indipendentemente dalla massa grassa, dai fattori cardiovascolari e metabolici **riduce la probabilità di sopravvivenza dei soggetti anziani.**

Esercizio fisico ed i **processi anabolici**, utili alla promozione della massa muscolare possono promuovere un **aumento della probabilità della sopravvivenza.**

Muscle mass index quartile categories: 1 2 3 4

Am J Med. 2014 June ; 127(6): 547-553. doi:10.1016/j.amjmed.2014.02.007.

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Amount of protein intake

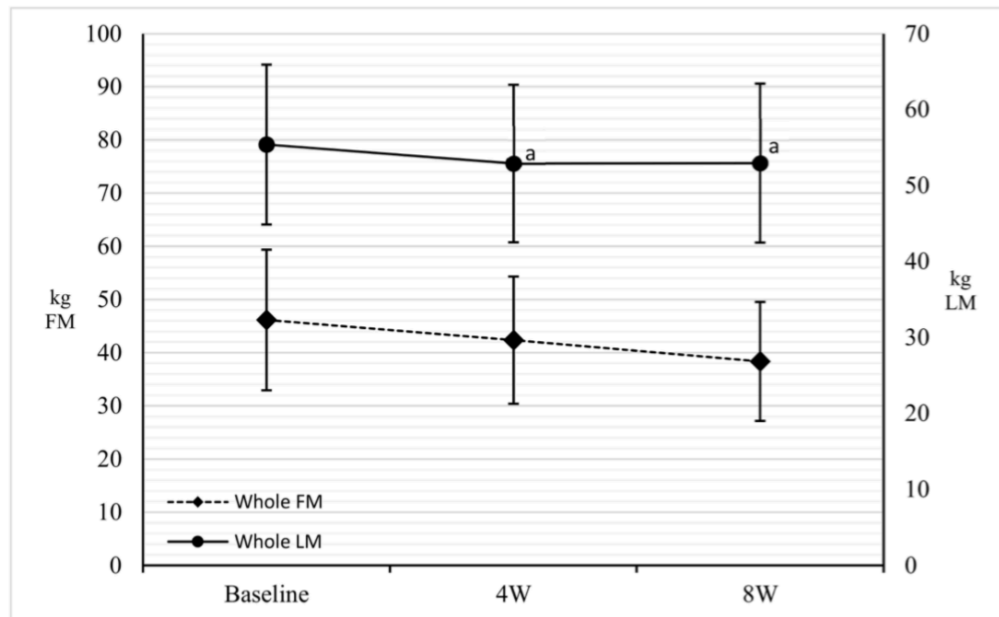




Figure 2. Comparison among baseline, four weeks, and eight weeks for whole FM and whole LM. Points sharing the same superscript letter are not significantly different from each other. Statistical significance attributed to results with $p < 0.05$. FM: Fat Mass; LM: Lean Mass; ECW: Extra Cellular Water; BCM: Body Cell Mass; 4W: 4 weeks; 8W: 8 weeks.

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nutrients


Article

Effects of a Personalized VLCKD on Body Composition and Resting Energy Expenditure in the Reversal of Diabetes to Prevent Complications

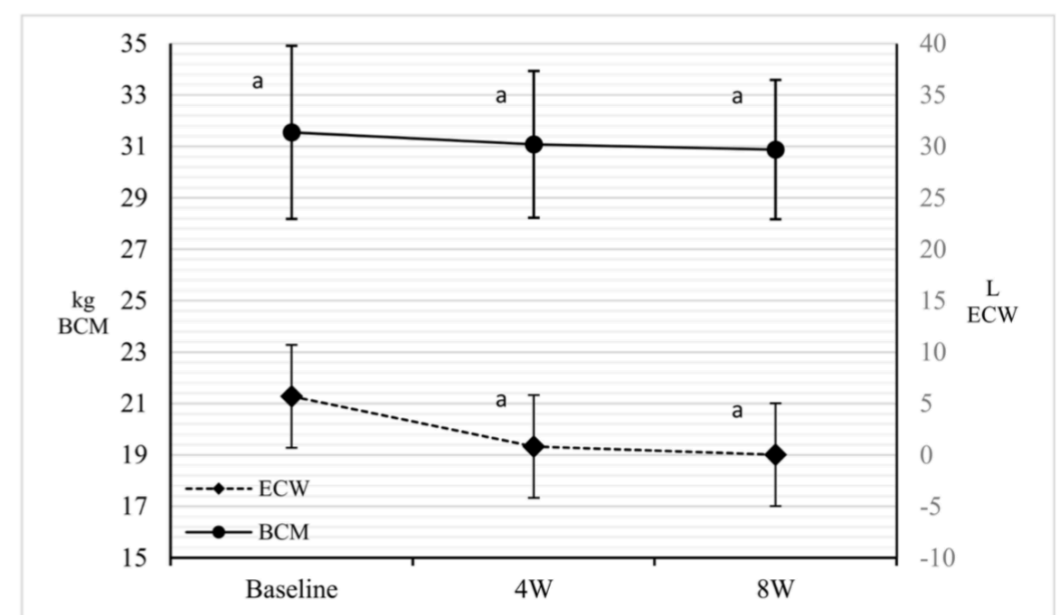


Figure 3. Comparison among baseline, four weeks, and eight weeks for ECW (L) and BCM (kg). Points sharing the same superscript letter are not significantly different from each other. Statistical significance attributed to results with $p < 0.05$. ECW: Extra Cellular Water; BCM: Body Cell Mass; 4W: 4 weeks; 8W: 8 weeks.

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Lipid supply quality

Table VI. Gene expression Δ Ct comparison between dietary treatments.

	Mean \pm Standard Deviation			<i>p</i>		
	VLCKD ₁	VLCKD ₂	VLCKD ₃	VLCKD ₁ vs. VLCKD ₂	VLCKD ₁ vs. VLCKD ₃	VLCKD ₂ vs. VLCKD ₃
SOD1	-0.83 \pm 1.16 (-2.52-0.66)	-0.49 \pm 1.04 (-1.72-0.51)	-1.48 \pm 0.87 (-2.44/-0.29)	0.62	0.26	0.14
CCL2	2.51 \pm 6.46 (-8.18-12.91)	2.36 \pm 5.70 (-3.37-7.93)	1.32 \pm 9.77 (-13.42-14.90)	0.97	0.77	0.86
NFKB	-1.44 \pm 3.96 (-9.75-3.54)	-2.81 \pm 4.95 (-9.77-1.08)	0.08 \pm 2.50 (-3.24-3.72)	0.59	0.42	0.25

All genes were compared between the three different dietary treatments. All results were expressed as mean \pm standard deviation (SD) followed by minimum and maximum. Statistical significance were attributed to results with $p < 0.05$ after parametric test (Student *t*-test) or non-parametric test ^(a)(Wilcoxon/Mann-Whitney). Results with statistical significance were reported in bold. Superoxide Dismutase-1 (SOD-1); Chemokine (C-C Motif) Ligand 2 (CCL2); Nuclear factor kappa-light-chain-enhancer of activated B cells (NfKB).

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Effects of very-low-calorie diet on body composition, metabolic state, and genes expression: a randomized double-blind placebo-controlled trial

G. MERRA¹, S. GRATTERI², A. DE LORENZO³, S. BARRUCCO⁴, M.A. PERRONE^{5,6}, E. AVOLIO⁷, S. BERNARDINI⁵, M. MARCHETTI⁸, L. DI RENZO⁴

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Indice MAI



Indices calculated using a ratio between components - **MAI**

ased on **18 food components**, divided in two groups:

It is based on two assumptions:

1. If the energy consumption of a population substantially changes over time, the consumption of each food group must be expressed as a **percentage** of total consumption.
2. To assess how food changes over time it is necessary to define «national reference diet» → Nicotera in 1960

TYPICALLY MEDITERRANEAN (10):

fruit, vegetables, legumes, cereals, bread, potatoes, fish, red wine and vegetable oils

NOT TYPICALLY MEDITERRANEAN (8):

meat, milk, cheese, eggs, animal fats and margarine, sugary drinks, cakes, biscuits and sugar.

MAI construction:

a. Total energy calculation (%) provided by both food groups

b. Final score: total energy ratio% of the TYPICALLY MEDITERRANEAN group and NOT TYPICALLY MEDITERRANEAN



Nicotera: Calabrian mountain rural area remaining Tyrrhenian Sea. It is defined as the third Italian rural area in the Seven Countries Study.

MAI USA	MAI CREVALCORE	MAI MONTEGIORGIO	MAI POLLICA	MAI NICOTERA
0,8-0,9	2,4	5,6	5,6-6,3	7,2-10

The Nicotera Diet: The Reference Italian Mediterranean Diet

Flaminio Fidanza¹, Adalberto Alberti², Daniela Fruttini³

The Mediterranean Adequacy Index: Further confirming results of validity

Nutrition, Metabolism & Cardiovascular Diseases (2003) 15, 61-66

Adalberto Alberti^{1}, Daniela Fruttini², Flaminio Fidanza³*

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Indice MAI

$$\text{MAI} = \frac{\% \text{ energia da CARBOIDRATI (gr. 1)+PROTETTIVI (gr. 2)}}{\% \text{ energia da DERIVATI ANIMALI (gr. 3)+DOLCI (gr. 4)}}$$

Carboidrati (gruppo 1): *pane, cereali, legumi, patate*

Protettivi (gruppo 2): *vegetali, frutta, pesce, vino rosso, EVO*
(Gruppi di alimenti appartenenti alla dieta mediterranea)

Derivati animali (gruppo 3): *latte, formaggio, carne, uova, margarina, grassi animali*

Dolci (gruppo 4): *bevande dolci, biscotti/torte, zucchero*
(Gruppi di alimenti non appartenenti alla dieta mediterranea)

In chetosi:

❖ Indice adeguatezza mediterraneo MAI

$$\text{MAI} = \frac{\% \text{ energia da CARBOIDRATI (gr. 1) + PROTETTIVI (gr. 2)}}{\% \text{ energia da DERIVATI ANIMALI (gr. 3) + DOLCI (gr. 4)}}$$

Gruppi di alimenti appartenenti alla dieta mediterranea

Carboidrati (gruppo 1): *pane, cereali, legumi, patate*

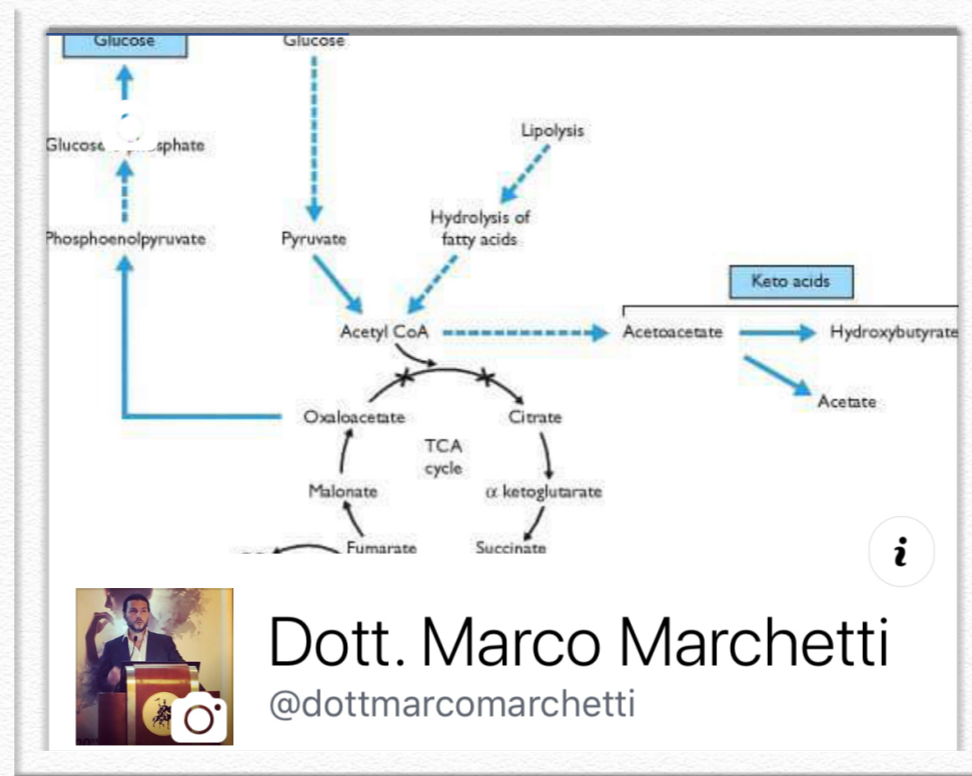
Protettivi (gruppo 2): *vegetali, frutta, pesce, vino rosso, olio d'oliva*

Gruppi di alimenti non appartenenti alla dieta mediterranea)

Derivati animali (gruppo 3): *latte, formaggio, carne, uova grassi animali*

Dolci (gruppo 4): *dolci, biscotti/torte, zucchero*

Per approfondimenti:



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