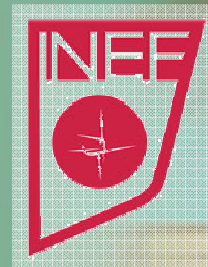
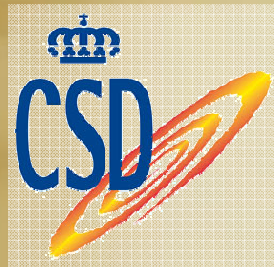


Dietary intake in track and field athletes during a competitive training period.

Speaker: Manuel Sillero Quintana (UPM)

Research group: Amaia García Aparicio, Antonio Torres García, Guadalupe Garrido Pastor.





- + Nutrition becomes a key factor for an optimal performance during sport practice, specially in elite sport (Burke and Maughan, 2007).
- + Each athletic discipline has specific nutrition requirements according to its energetic demands.
- + **Is it nutrition knowledge of the Spanish elite athletes appropriate?**
- + **Basis of a support project to the RFEA athletes (Sponsored C.S.D)**



DIETARY INTAKE:

- + Recall weighed of food intakes (5 days x 3 mayor daily meals)
- + Digital scales Mettler Toledo® (±1g).
- + Software Nutritionist First Data Bank (San Bruno, Ca).
- + Compared with Dietary Reference Intake (DRI´s).



ENERGY EXPENDITURE REQUIREMENT (EER):

- + 24 hour activity questionnaire (recall). Period of 5 days.



$$EER (Kcal) = 662 - (0.53 * age) + PA * (15.91 * weight [Kg] + 539.6 * height [m])$$



$$EER (Kcal) = F * PHYSICAL ACTIVITY COEFFICIENT (PA) - (0.53 * age) + 726 * height [m]$$



METHODOLOGY

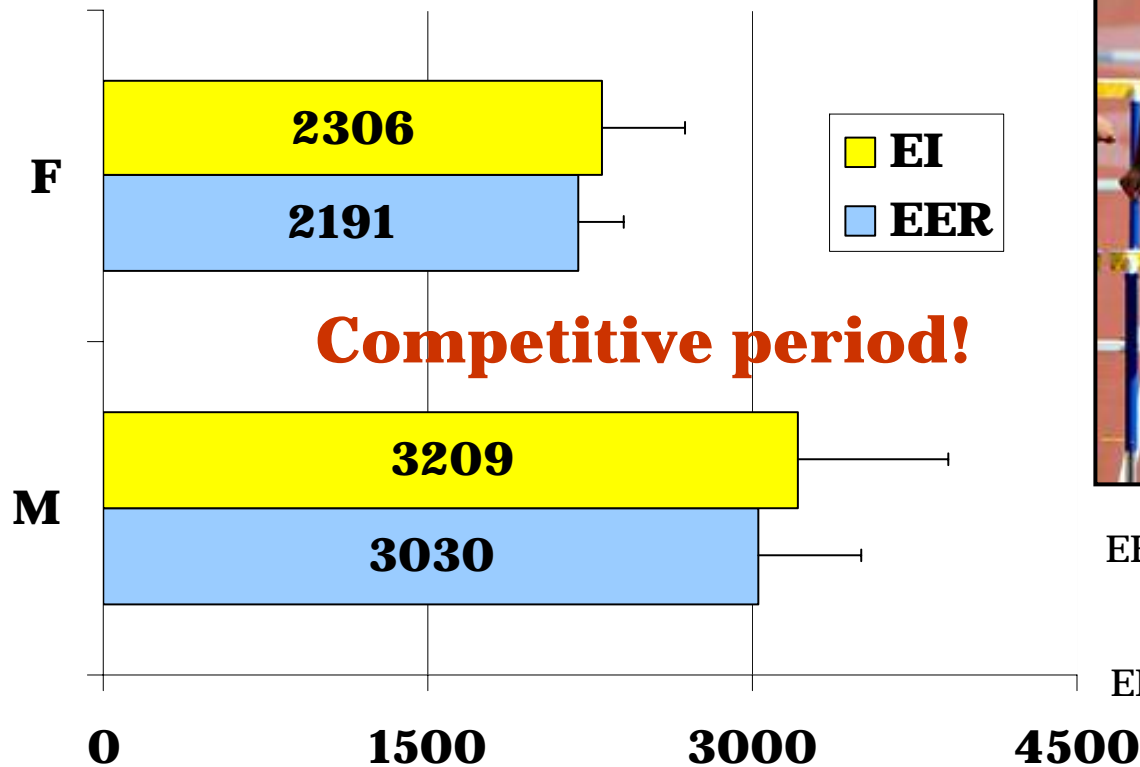
	Age (yr)	Weight (kg)	Height (m)	BMI (kg/m²)	Training (h/wk)
F (n=8)	19.9±2.1	56.4±7.1	1.71±0.04	19.3±1.7	14.3±4.7
M (n=12)	23.4±2.7	68.5±11.4	1.79±0.07	21.3±2.2	16.4±3.3

	Discipline	n
M	Middle D.	4
	Long D.	4
	Fast Events	4
F	Middle D.	5
	Long D.	2
	Fast Events	1





ENERGY INTAKE (EI) & ESTIMATED ENERGY REQUERIMENTS (EER)



$$\text{EER (Kcal) M} = 662 - (9.53 \cdot \text{age}) + \text{PA} \cdot (15.91 \cdot \text{weight [Kg]} + 539.6 \cdot \text{height [m]})$$

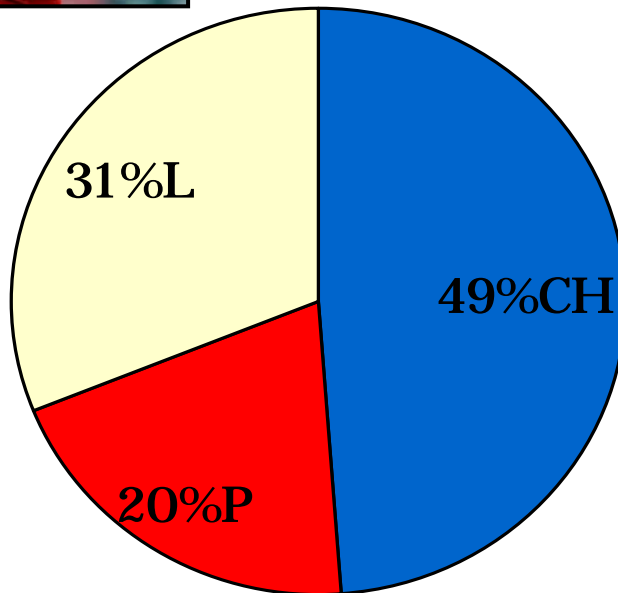
$$\text{EER (Kcal) F} = 354 - (6.91 \cdot \text{age}) + \text{PA} \cdot (9.36 \cdot \text{weight [Kg]} + 726 \cdot \text{height [m]})$$



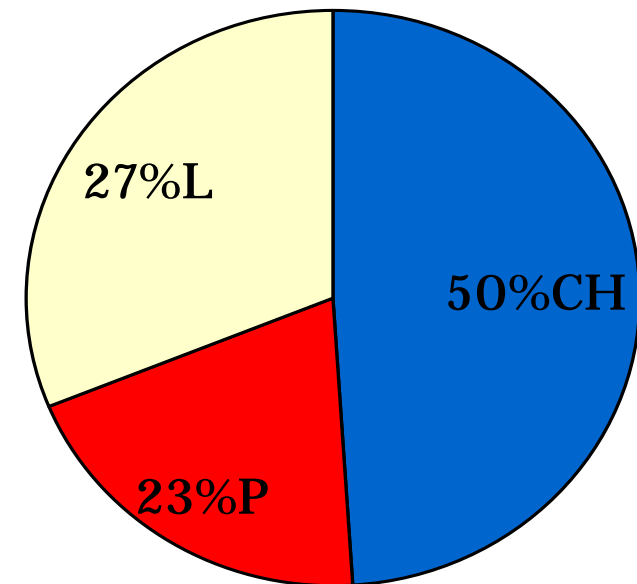
ENERGY DISTRIBUTION



MALES



FEMALES





MACRONUTRIENTS INTAKE BY GENDER

	Carbohydrates		Proteins		Lipids		
	g	g/kg	g	g/kg	g	g/kg	Cholesterol (mg)
F	305±165*	5.4±0.9	143±40	2.5±0.7	72±21	1.3±0.4	312±112
M	405±99	5.9±1.3	166±59	2.4±0.6	112±35**	1.6±0.3	420±178

7-10 g/kg

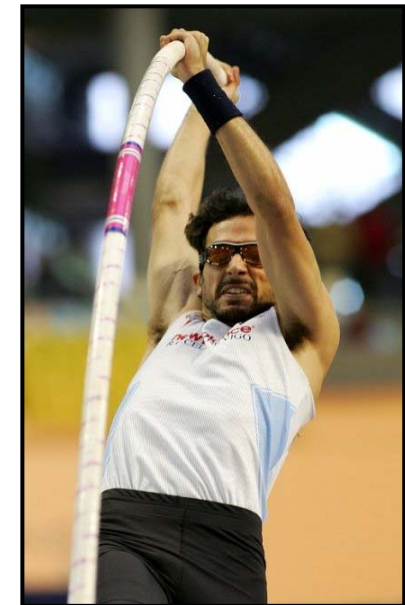
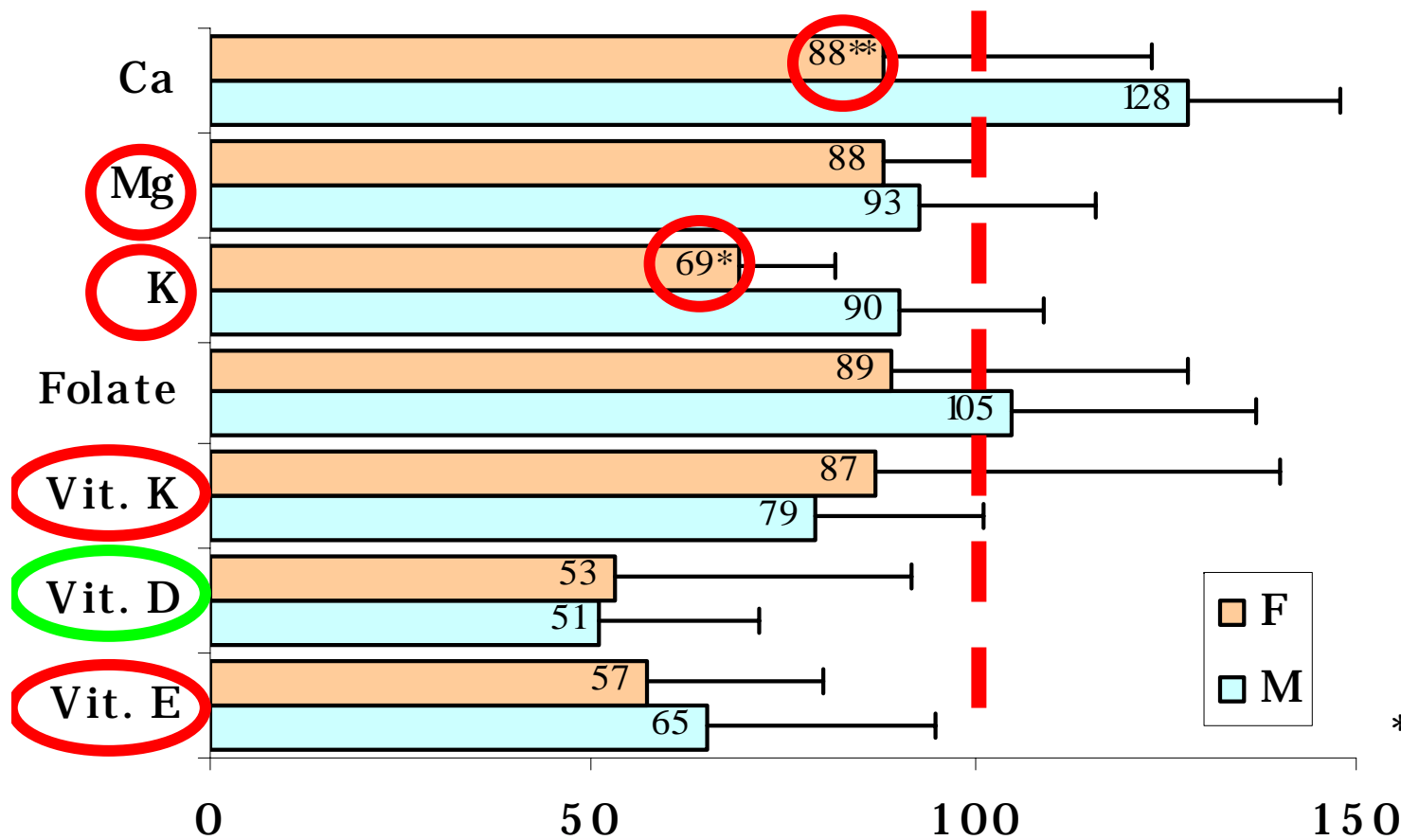
1.5-1.6 g/kg

0.8-1 g/kg Mx 300 mg/day

* p<0.05; ** p<0.01



SUBOPTIMAL MICRONUTRIENTS INTAKE EXPRESSED AS %RDA



(FNB, 2006)

* p<0.05; ** p<0.01



NUTRIENTS DENSITY

	Ca	Mg	K	Vit. E	Folate	Vit. K	Vit. D
	mg/1000 kcal				µg/1000 kcal		
F	122±18	401±163	1424±203	3.7±1.4	155±66	34±22	1.2±0.8
M	122±41	409±71	1345±264	3.1±1.6	135±45	30±9	0.8±0.3



- Considering the last recommendations for competitive period (Burke, Maughan, & Shirreffs, 2007) marginal carbohydrates and elevated lipids intakes were found in both groups.
- Although female athletes' intakes were lower in terms of energy and higher in marginal micronutrients; however, their nutrient density values were similar than in males.



- Female athletes have to increase calcium intakes, this target could be fulfilled increasing the consumption of fortified calcium food (cereals and dairy).
- Nutritional counseling, intervention and education would be required in order to generate effective changes in the diet quality of elite athletes.



THANK YOU

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