

Glicídios | **Proteína** | **Água**

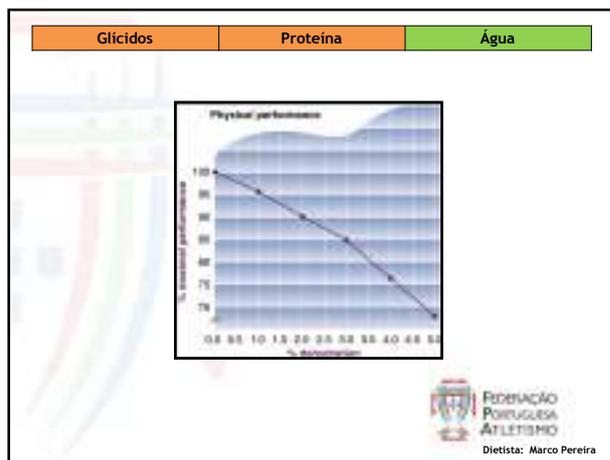
Mas

PROTEÍNA=AA ESSENCIAIS=BCAA's=LEUCINA

Recomendações para atletas no pós-treino:
 • 20g Proteína • 20g aa essenciais • 4g BCAA's • 2g Leucina

	Quantidade	Glúten	Lactose	Proteínas	Leucina	BCAA's
ALIMENTOS						
Yog (Lactaid)	100 g	1,1 g	14,1 g	12,4 g	127 mg	264 mg
Yog (Dairyfree 0% gordura)	100 g	0,4 g	1,4 g	20,1 g	204 mg	438 mg
Whey Protein (Dorland)	75 g	1,7 g	11,3 g	18,4 g	180 mg	410 mg
Requêsão (1% g)	100 g	1,4 g	13,4 g	10,1 g	128 mg	294 mg
Queijo cottage (1% gordura)	100 g	1,4 g	1,4 g	10,1 g	104 mg	240 mg
PRODUTOS ESPECIAIS						
Whey Protein (MPS)	30 g	0,5 g	3,5 g	7,4 g	74 mg	168 mg
Leucina (MPS)	30 g	0,5 g	3,5 g	7,4 g	74 mg	168 mg
MISCELÂNEAS						
Ovos	100 g	0,0 g	0,0 g	12,6 g	126 mg	282 mg
Carne (MPS)	100 g	0,0 g	0,0 g	20,8 g	208 mg	468 mg
Peixe (MPS)	100 g	0,0 g	0,0 g	20,8 g	208 mg	468 mg

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Faixa de hidratação (litros)

Tempo (h)	Tempo (min)	Tempo (seg)	Tempo (ms)	Tempo (µs)	Tempo (ns)	Tempo (ps)	Tempo (fs)	Tempo (as)
1	15	150	1500	15000	150000	1500000	15000000	150000000
2	30	300	3000	30000	300000	3000000	30000000	300000000
3	45	450	4500	45000	450000	4500000	45000000	450000000
4	60	600	6000	60000	600000	6000000	60000000	600000000
5	75	750	7500	75000	750000	7500000	75000000	750000000
6	90	900	9000	90000	900000	9000000	90000000	900000000
7	105	1050	10500	105000	1050000	10500000	105000000	1050000000
8	120	1200	12000	120000	1200000	12000000	120000000	1200000000
9	135	1350	13500	135000	1350000	13500000	135000000	1350000000
10	150	1500	15000	150000	1500000	15000000	150000000	1500000000

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✓ De acordo com as necessidades individuais

Ingerir 150% do peso perdido em líquidos
 2 x 1,5 = 3 litros de líquidos

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Creatina	Cafeína	Bicarbonato	B-Alanina	Nitratos
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- ✓ + de 90% da creatina sérica destina-se ao músculo Esquelético
- ✓ 65% intracelular, sob a forma fosforilada (fosfocreatina) e os restantes 35% como creatina livre.
- ✓ As sua [músculo] = 130mmol/kg
- ✓ Suplementação] = 160 mmol/kg.

Ergogénico: desportos inferiores a 30 seg

Protocolo:

- ✓ Norma 3-5g/dia
- ✓ Recomendado:
- ✓ 5 dias Iniciais - 20g/dia
- ✓ Subsequentes: 5-10g/dia

Kreider et al. Mol Cell Biochem 2003;244:89-94
Volk et al. Nutrition 2004;20:699-814
Branch et al. Int J Sport Nutr Exerc Metab 2003;13:198-226
Nissen et al. J Appl Physiol 2000;94:607-609
Bemben et al. Sport Medicine 2005;35:107-125
Tipton et al. Essays Biochem 2008;44:95-98
Lopez et al. J Athl Train 2009;44:215-223

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Creatina	Cafeína	Bicarbonato	B-Alanina	Nitratos
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- ✓ Efeito ao nível do SNC, retardando a percepção à fadiga
- ✓ a cafeína é rapidamente absorvida
- ✓ As [séricas] aumentam de 15-45 minutos após a sua toma
- ✓ [] máxima aos 60 minutos
- ✓ valores diminuem de 50 a 75% ao fim de 3-6 horas

Ergogénico:
Desportos de Endurance (corrida, ciclismo, ski de fundo)

Protocolo:

- ✓ 2-3mg/kg => 15-45 pré competição

Burke LM. Appl Physiol Nutr Exerc Metab 2007;17:595-607
Davis et al. Sports Med 2009;39:813-832
Ganio et al. J Strength Cond Res 2009;23:315-324
Tamopcsky MA. Appl Physiol Nutr Exerc Metab 2006;31:1264-1269

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Creatina	Cafeína	Bicarbonato	B-Alanina	Nitratos
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- ✓ suplementação com o bicarbonato de sódio resulta num aumento do pH (alcalose).
- ✓ possibilidade de ocorrência de problemas gastro intestinais

Ergogénico: desportos inferiores a 30 seg

Protocolo:

- ✓ 120-150min ao evento em períodos de 30min
- ✓ 300mg/kg (NaHCO₃) + 7ml (H₂O)/kg + 1,5g Glicidos/Kg
- ✓ Capsula

Carr et al. Int J Sport Nutr Exerc Metab 2011;21:189-194
Joyce et al. Eur J Appl Physiol 2012;112:461-469
Cameron et al. Int J Sport Nutr Exerc Metab 2010;20:307-321
Wu et al. J Int Soc Sports Nutr 2010;7:33
Siegler et al. J Strength Cond. Res 2010;24:100-108

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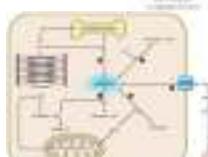
Creatina	Cafeína	Bicarbonato	B-Alanina	Nitratos
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- ✓ Aminoácido Não essencial
- ✓ Precursor da carnosina
- ✓ ↑ [organismo] em condições normais
- ✓ Suplementação β-alanina => ↑ [carnosina]

Ergogénico: desportos até a 60 seg

Protocolo:

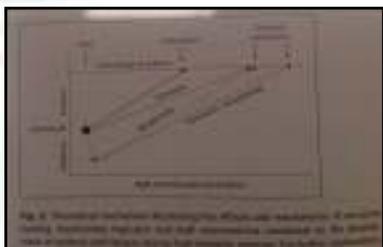
- ✓ Duração => 20-40 dias (5g/dia) => ↑ [carnosina] 20-30%



Arlotti et al. Med Sci Sports Exerc 2010;42:1163-1173
Stout JR et al. Amino Acids 2007;32:381-386
Harris RC et al. Amino Acids 2006;30:279-289

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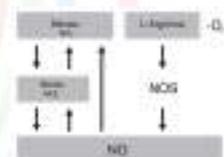


Seki C et al. Med Sci Sports Exerc 2011;43:1973-1979
Bellinger PM et al. Med Sci Sports Exerc 2012;44:1545-1551

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Creatina	Cafeína	Bicarbonato	B-Alanina	Nitratos
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- ✓ Via = Nitrato (NO₃) ↔ Nitrito (NO₂) ↔ Óxido Nítrico (NO) ↔ L-Arginina
- ✓ Modulação do músculo Esquelético:
 - ✓ Pressão arterial
 - ✓ Homeostasia glicose e cálcio
 - ✓ Biogénese e respiração mitocondrial
- ✓ NO₂: Apresenta forte correlação com tolerância ao exercício



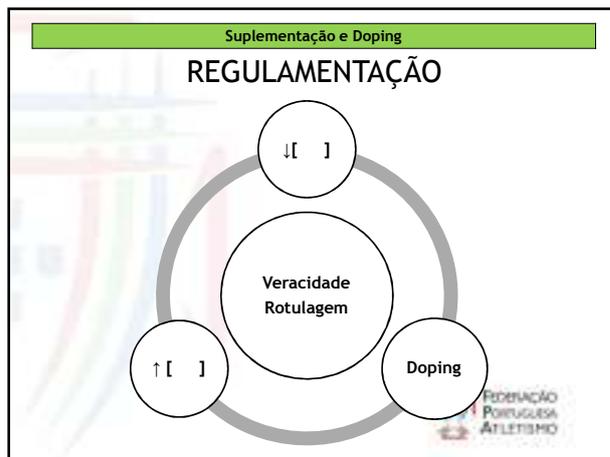
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Dietista: Marco Pereira

Creatina **Cafeína** **Bicarbonato** **B-Alanina** **Nitratos**

Ergogénico: Desportos de endurance
Protocolo:
 ✓ 2-3 horas previas ao exercício/competição
 ✓ 0,1mmol/kg de NO₃⁻ => ↑[NO₂⁻]
 ✓ 500ml de sumo de beterraba = 5-6mmol de NO₃⁻
 ✓ recomendado a forma + natural

Rassaf T et al, Br J Sports Med 2007;41:669-673
 Dreisigacker U et al, Nitric Oxide 2010;23:128-135
 Bailey SJ et al, J Appl Physiol 2010;109:135-148
 Lansley KE et al, J Appl Physiol 2011;110:591-600

Dietista: Marco Pereira



Suplementação e Doping

Analysis of Non-Hormonal Nutritional Supplements for Anabolic-Androgenic Steroids - Results of an Interventional Study

Table 3 (caption): Table 3 shows the countries and number of supplements analyzed.

Country	No. of products	No. of positives	Percentage of positives
Netherlands	31	8	25.8%
Austria	22	5	22.7%
UK	37	7	18.9%
USA	240	45	18.8%
Italy	35	5	14.3%
Spain	29	4	13.8%
Germany	129	15	11.6%
Belgium	30	2	6.7%
France	30	2	6.7%
Norway	30	1	3.3%
Switzerland	13	-	-
Sweden	6	-	-
Hungary	2	-	-
Total	634	94	14.8%

Suplementação e Doping

Nutritional supplements cross-contaminated and laced with doping substances

Table 4 (caption): Table 4 shows the countries and number of supplements analyzed.

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Recently several slimming products adulterated with the anorectic drug **sibutramine** appeared on the market. Only since 2006 sibutramine is on the list of prohibited substances of the World Anti-Doping Agency. In at least three cases, sibutramine was detected in 'pure herbal' Chinese slimming capsules.¹⁷⁻¹⁹ Additionally, the same compound was also

Suplementação e Doping

Nutritional supplements cross-contaminated and laced with doping substances

Table 4 (caption): Table 4 shows the countries and number of supplements analyzed.

Product	Country	Export date	Tablet	Cross-contaminations
Vitamin C	Germany	July 2003	Tablet 1	Acetaminophen (50 mg/kg)
Vitamin C	Germany	July 2003	Tablet 2	Acetaminophen (50 mg/kg)
Vitamin C	Germany	July 2003	Tablet 3	Negative
Magnesium + Vitamin C	Germany	January 2006	Tablet 1	Negative
Magnesium + Vitamin C	Germany	January 2006	Tablet 2	Negative
Magnesium + Vitamin C	Germany	January 2006	Tablet 3	Negative
Multivitamin	Spain	July 2006	Tablet 1	Stanozolol (0.01 mg/kg)
Multivitamin	Spain	July 2006	Tablet 2	Stanozolol (0.01 mg/kg)
Multivitamin	Spain	July 2006	Tablet 3	Stanozolol (0.01 mg/kg)
Multivitamin	Spain	July 2006	Tablet 4	Stanozolol (0.01 mg/kg)
Multivitamin	Spain	July 2006	Tablet 5	Stanozolol (0.01 mg/kg)
Multivitamin	Spain	July 2006	Tablet 6	Stanozolol (0.01 mg/kg)
Multivitamin	Spain	July 2006	Tablet 7	Stanozolol (0.01 mg/kg)

Suplementação e Doping

Nutritional supplements cross-contaminated and laced with doping substances

USP (United States Pharmacopeia) logo and **NSF** (National Supplement Factories) logo.

NSF Certified for Sport logo.

BSCG logo.

Background
 Before you consider taking a supplement to the athlete's diet, it is an important to purchase a supplement from a reputable source. Athlete should be suspicious over dietary supplements for a number of reasons. Athlete should be aware that many products are not what they seem to be. Many products are not what they seem to be. Many products are not what they seem to be.

Suplementação e Doping

The World Anti-Doping Agency (WADA) was established in November 1999.²³ Four years later, at the 2003 World Conference on Doping in Sport, all major sports federations and nearly 80 countries supported a resolution that accepts the WADA Code as the basis for their stance against doping in sports. The Code provides a framework for antidoping policies and rules and regulations for sport organizations and public authorities to level the global playing field. Athletes are held to a code of "strict liability," which means they are ultimately and solely responsible for any prohibited substance or method identified during testing. It is the athlete's responsibility to know which substances are banned and which substances can result in a doping violation. This Code acts as the

SUPLEMENTAÇÃO EM JOVENS



Young athletes using a wide range of health (HAA) and need to use (DMS) supplements, including the use of energy drinks that contain high amounts of caffeine and are not suitable for young athletes. Athletes and coaches should be aware that supplements do not provide a short cut to success.



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CONCLUSÃO

“A Investigação orienta a pratica, mas a pratica também orienta a investigação”

(Haag et al, Sport Sci Ver 1994;3:1-10)



Obrigado

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