

Literaturliste: Kreatin – warum, wann und für wen?

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1. Adcock KH, Nedelcu J, Loenneker T, Martin E, Wallimann T, Wagner BP. Neuroprotection of creatine supplementation in neonatal rats with transient cerebral hypoxia-ischemia. *Dev Neurosci.* 2002; 24 (5): 382–388.
2. Adhietty PJ, Beal MF. Creatine and Its Potential Therapeutic Value for Targeting Cellular Energy Impairment in Neurodegenerative Diseases. *Neuromolecular Med.* 2008 Nov 13. [Epub ahead of print]
3. Andreassen OA, Jenkins BG, Dedeoglu A, Ferrante KL, Bogdanov MB, Kaddurah Daouk R, Beal MF. Increases in cortical glutamate concentrations in transgenic amyotrophic lateral sclerosis mice are attenuated by creatine supplementation. *J Neurochem.* 2001a Apr; 77 (2): 383–390.
4. Andreassen OA, Dedeoglu A, Ferrante RJ, Jenkins BG, Ferrante KL, Thomas M, Friedlich A, Browne SE, Schilling G, Borchelt DR, Hersch SM, Ross CA, Beal MF. Creatine increase survival and delays motor symptoms in a transgenic animal model of Huntington's disease. *Neurobiol Dis.* 2001b Jun; 8 (3): 479–491.
5. Andres RH, Ducray AD, Pérez-Bouza A, Schlattner U, Huber AW, Krebs SH, Seiler RW, Wallimann T, Widmer HR. Creatine supplementation improves dopaminergic cell survival and protects against MPP⁺ toxicity in an organotypic tissue culture system. *Cell Transplant.* 2005; 14 (8): 537–550.
6. Andres RH, Ducray AD, Schlattner U, Wallimann T, Widmer HR. Functions and effects of creatine in the central nervous system. *Brain Res Bull.* 2008 Jul 1; 76 (4): 329–343. Review
7. Andrews R, Greenhaff P, Curtis S, Perry A, Cowley AJ. The effect of dietary creatine supplementation on skeletal muscle metabolism in congestive heart failure. *Eur Heart J.* 1998 Apr; 19 (4): 617–622.
8. Antolic A, Roy BD, Tarnopolsky MA, Zernicke RF, Wohl GR, Shaughnessy SG, Bourgeois JM. Creatine monohydrate increases bone mineral density in young Sprague-Dawley rats. *Med Sci Sports Exerc.* 2007 May; 39 (5): 816–820.
9. Baker SK, Tarnopolsky MA. Targeting cellular energy production in neurological disorders. *Expert Opin Investig Drugs.* 2003 Oct; 12 (10): 1655–1679. Review.
10. Bassit RA, Curi R, Costa Rosa LF. Creatine supplementation reduces plasma levels of pro-inflammatory cytokines and PGE₂ after a half-ironman competition. *Amino Acids.* 2008 Aug; 35 (2): 425–431.
11. Bender A, Auer DP, Merl T, Reilmann R, Saemann P, Yassouridis A, Bender J, Weindl A, Dose M, Gasser T, Klopstock T. Creatine supplementation lowers brain glutamate levels in Huntington's disease. *J Neurol.* 2005 Jan; 252 (1): 36–41.
12. Bender A, Beckers J, Schneider I, Hötter SM, Haack T, Ruthsatz T, Vogt-Weisenhorn DM, Becker L, Genius J, Rujescu D, Irmeler M, Mijalski T, Mader M, Quintanilla-Martinez L, Fuchs H, Gailus-Durner V, de Angelis MH, Wurst W, Schmidt J, Klopstock T. Creatine improves health and survival of mice. *Neurobiol Aging.* 2008 Sep; 29 (9): 1404–1411.
13. Berneburg M, Gremmel T, Kürten V, Schroeder P, Hertel I, von Mikecz A, Wild S, Chen M, Declercq L, Matsui M, Ruzicka T, Krutmann J. Creatine supplementation normalizes mutagenesis of mitochondrial DNA as well as functional consequences. *J Invest Dermatol.* 2005 Aug; 125 (2): 213–220.
14. Bohnhorst B, Geuting T, Peter CS, Dördelmann M, Wilken B, Poets CF. Randomized, controlled trial of oral creatine supplementation for apnea of prematurity. *Pediatrics.* 2004 Apr; 113 (4): e303–7.
15. Bourgeois JM, Nagel K, Pearce E, Wright M, Barr RD, Tarnopolsky MA. Creatine monohydrate attenuates body fat accumulation in children with acute lymphoblastic leukemia during maintenance chemotherapy. *Pediatr Blood Cancer.* 2008 Aug; 51 (2): 183–187.
16. Braissant O, Henry H, Villard AM, Zurich MG, Loup M, Eilers B, Parlascino G, Matter E, Boulart O, Honnegger P, Bachmann C. Ammonium-induced impairment of axonal growth is prevented through glial creatine. *J Neurosci.* 2002 Nov 15; 22 (22): 9810–9820.
17. Brewer GJ, Wallimann TW. Protective effect of the energy precursor creatine against toxicity of glutamate and beta-amyloid in rat hippocampal neurons. *J Neurochem.* 2000 May; 74 (5): 1968–1978.
18. Broadhurst CL, Cunnane SC, Crawford MA. Rift Valley lake fish and shellfish provided brain-specific nutrition for early Homo. *Br J Nutr.* 1998 Jan; 79 (1): 3–21. Review.
19. Brosnan JT, Brosnan ME. Creatine: endogenous metabolite, dietary, and therapeutic supplement. *Ann Rev Nutr.* 2007; 27: 241–261. Review.
20. Brosnan ME, Edison EE, da Silva R, Brosnan JT. New insights into creatine function and synthesis. *Adv Enzyme Regul.* 2007a; 47: 252–260.
21. Brosnan JT, da Silva R, Brosnan ME. Amino acids and the regulation of methyl balance in humans. *Curr Opin Clin Nutr Metab Care.* 2007b Jan; 10 (1): 52–57. Review.
22. Brustovetsky N, Brustovetsky T, Dubinsky JM. On the mechanisms of neuroprotection by creatine and phosphocreatine. *J Neurochem.* 2001 Jan; 76 (2): 425–434.
23. Buford TW, Kreider RB, Stout JR, Greenwood M, Campbell B, Spano M, Ziegenfuss T, Lopez H, Landis J, Antonio J. International Society of Sports Nutrition position stand: creatine supplementation and exercise. *J Int Soc Sports Nutr.* 2007 Aug 30; 4: 6. open access: www.jissn.com/content/4/1/6
24. Burke DG, Chilibeck PD, Parise G, Candow DG, Mahoney D, Tarnopolsky M. Effect of creatine and weight training on muscle creatine and performance in vegetarians. *Med Sci Sports Exerc.* 2003 Nov; 35 (11): 1946–1955.
25. Candow DG, Chilibeck PD. Effect of creatine supplementation during resistance training on muscle accretion in the elderly. *J Nutr Health Aging.* 2007 Mar–Apr; 11 (2): 185–188. Review.
26. Candow DG, Chilibeck PD. Timing of creatine or protein supplementation and resistance training in the elderly. *Appl Physiol Nutr Metab.* 2008 Feb; 33 (1): 184–190. Review.
27. Chang CT, Wu CH, Yang CW, Huang JY, Wu MS. Creatine monohydrate treatment alleviates muscle cramps associated with haemodialysis. *Nephrol Dial Transplant.* 2002 Nov; 17 (11): 1978–1981.
28. Ceddia RB, Sweeney G. Creatine supplementation increases glucose oxidation and AMPK phosphorylation and reduces lactate production in L6 rat skeletal muscle cells. *J Physiol.* 2004 Mar 1; 555 (Pt 2): 409–421.
29. Chilibeck PD, Chrusch MJ, Chad KE, Shawn Davison K, Burke DG. Creatine monohydrate and resistance training increase bone mineral content and density in older men. *J Nutr Health Aging.* 2005 Sep–Oct; 9 (5): 352–353.
30. Crozatier B, Badoual T, Boehm E, Ennezat PV, Gueunoun T, Su J, Veksler V, Hittinger L, Ventura-Clapier R. Role of creatine kinase in cardiac excitation-contraction coupling: studies in creatine kinase-deficient mice. *FASEB J.* 2002 May; 16 (7): 653–660.
31. Dalbo VJ, Roberts MD, Stout JR, Kerksick CM. Putting to rest the myth of creatine supplementation leading to muscle cramps and dehydration. *Br J Sports Med.* 2008 Jul; 42 (7): 567–573. Epub 2008 Jan 9. Review.
32. Dangott B, Schultz E, Mozdzik PE. Dietary creatine monohydrate supplementation increases satellite cell mitotic activity during compensatory hypertrophy. *Int J Sports Med.* 2000 Jan; 21 (1): 13–16.
33. Deacon SJ, Vincent EE, Greenhaff PL, Fox J, Steiner MC, Singh SJ, Morgan MD. Randomized controlled trial of dietary creatine as an adjunct therapy to physical training in chronic obstructive pulmonary disease. *Am J Respir Crit Care Med.* 2008 Aug 1; 178 (3): 233–239.
34. Dechent P, Pouwels PJ, Wilken B, Hanefeld F, Frahm J. Increase of total creatine in human brain after oral supplementation of creatine-monohydrate. *Am J Physiol.* 1999 Sep; 277 (3 Pt 2): R698–704.
35. Dedeoglu A, Kubilus JK, Yang L, Ferrante KL, Hersch SM, Beal MF, Ferrante RJ. Creatine therapy provides neuroprotection after onset of clinical symptoms in Huntington's disease transgenic mice. *J Neurochem.* 2003 Jun; 85 (6): 1359–1367.
36. Deldicque L, Louis M, Theisen D, Nielens H, Dehoux M, Thissen JP, Rennie MJ, Francaux M. Increased IGF mRNA in human skeletal muscle after creatine supplementation. *Med Sci Sports Exerc.* 2005 May; 37 (5): 731–736.
37. Deldicque L, Theisen D, Bertrand L, Hespel P, Hue L, Francaux M. Creatine enhances differentiation of myogenic C2C12 cells by activating both p38 and Akt/PKB pathways. *Am J Physiol Cell Physiol.* 2007 Oct; 293 (4): C1263–1271.
38. Deldicque L, Atherton P, Patel R, Theisen D, Nielens H, Rennie MJ, Francaux M. Effects of resistance exercise with and without creatine supplementation on gene expression and cell signaling in human skeletal muscle. *J Appl Physiol.* 2008 Feb; 104 (2): 371–378.
39. Deldicque L, Francaux M. Functional food for exercise performance: fact or foe? *Curr Opin Clin Nutr Metab Care.* 2008 Nov; 11 (6): 774–781.
40. Derave W, Jones G, Hespel P, Harris RC. Creatine supplementation augments skeletal muscle carnosine content in senescence-accelerated mice (SAMP8). *Rejuvenation Res.* 2008 Jun; 11 (3): 641–647.
41. Doherty M, Smith PM, Davison RC, Hughes MG. Caffeine is ergogenic after supplementation of oral creatine monohydrate. *Med Sci Sports Exerc.* 2002 Nov; 34 (11): 1785–1792.
42. Dolder M, Walzel B, Speer O, Schlattner U, Wallimann T. Inhibition of the mitochondrial permeability transition by creatine kinase substrates. Requirement for microcompartmentation. *J Biol Chem.* 2003 May 16; 278 (20): 17760–17766.

43. Eppenberger-Eberhardt M, Riesinger I, Messerli M, Schwarb P, Müller M, Eppenberger HM, Wallimann T. Adult rat cardiomyocytes cultured in creatine-deficient medium display large mitochondria with paracrystalline inclusions, enriched for creatine kinase. *J Cell Biol.* 1991 Apr; 113 (2): 289–302.
44. Escolar DM, Buysse G, Henricson E, Leshner R, Florence J, Mayhew J, Tesi-Rocha C, Gorni K, Pasquali L, Patel KM, McCarter R, Huang J, Mayhew T, Bertorini T, Carlo J, Connolly AM, Clemens PR, Goemans N, Iannaccone ST, Igarashi M, Nevo Y, Pestronk A, Subramony SH, Vedanarayanan VV, Wessel H; CINRG Group. CINRG randomized controlled trial of creatine and glutamine in Duchenne muscular dystrophy. *Ann Neurol.* 2005 Jul; 58 (1): 151–155.
45. Ferrante RJ, Andreassen OA, Jenkins BG, Dedeoglu A, Kuemmerle S, Kubilus JK, Kaddurah-Daouk R, Hersch SM, Beal MF. Neuroprotective effects of creatine in a transgenic mouse model of Huntington's disease. *J Neurosci.* 2000 Jun 15; 20 (12): 4389–4397.
46. Funanage VL, Carango P, Shapiro IM, Tokuko T, Tuan RS. Creatine kinase activity is required for mineral deposition and matrix synthesis in endochondral growth cartilage. *Bone Miner.* 1992 May; 17 (2): 228–233.
47. Gerber I, ap Gwynn I, Alini M, Wallimann T. Stimulatory effects of creatine on metabolic activity, differentiation and mineralization of primary osteoblast-like cells in monolayer and micromass cell cultures. *Eur Cell Mater.* 2005 Jul 15; 10: 8–22.
48. Gerber I, Gerber HW, Dora C, Uebelhart D, Wallimann T. Kreatin tut alten Knochen gut! *Schweiz Med Forum* 2008 8 (30–31): 550–551.
49. Gordon A, Hultman E, Kaijser L, Kristjansson S, Rolf CJ, Nyquist O, Sylven C. Creatine supplementation in chronic heart failure increases skeletal muscle creatine phosphate and muscle performance. *Cardiovasc Res.* 1995 Sep; 30 (3): 413–418.
50. Gotshalk LA, Volek JS, Staron RS, Denegar CR, Hagerman FC, Kraemer WJ. Creatine supplementation improves muscular performance in older men. *Med Sci Sports Exerc.* 2002 Mar; 34 (3): 537–543.
51. Gotshalk LA, Kraemer WJ, Mendonca MA, Vingren JL, Kenny AM, Spiering BA, Hatfield DL, Fragala MS, Volek JS. Creatine supplementation improves muscular performance in older women. *Eur J Appl Physiol.* 2008 Jan; 102 (2): 223–231.
52. Grazioli I, Melzi G, Strumia E. Multicentre controlled study of creatine phosphate in the treatment of heart failure. *Curr. Ther. Res.* 1992; 52: 271–280.
53. Green AL, Hultman E, Macdonald IA, Sewell DA, Greenhaff PL. Carbohydrate ingestion augments skeletal muscle creatine accumulation during creatine supplementation in humans. *Am J Physiol.* 1996 Nov; 271 (5 Pt 1): E821–826.
54. Greenhaff PL, Casey A, Short AH, Harris R, Soderlund K, Hultman E. Influence of oral creatine supplementation of muscle torque during repeated bouts of maximal voluntary exercise in man. *Clin Sci (Lond).* 1993 May; 84 (5): 565–571.
55. Greenwood M, Kreider RB, Greenwood L, Byars A. Cramping and Injury Incidence in Collegiate Football Players Are Reduced by Creatine Supplementation. *J Athl Train.* 2003 Sep; 38 (3): 216–219.
56. Gualano B, Ugrinowitsch C, Novaes RB, Artioli GG, Shimizu MH, Seguro AC, Harris RC, Lancha AH Jr. Effects of creatine supplementation on renal function: a randomized, double-blind, placebo-controlled clinical trial. *Eur J Appl Physiol.* 2008 May; 103 (1): 33–40.
57. Guerrero-Ontiveros ML, Wallimann T. Creatine supplementation in health and disease. Effects of chronic creatine ingestion in vivo: down-regulation of the expression of creatine transporter isoforms in skeletal muscle. *Mol Cell Biochem.* 1998 Jul; 184 (1–2): 427–37.
58. Hadjicharalambous M, Kilduff LP, Pitsiladis YP. Brain serotonin and dopamine modulators, perceptual responses and endurance performance during exercise in the heat following creatine supplementation. *J Int Soc Sports Nutr.* 2008 Sep 30; 5 (1): 14.
59. Harris RC, Almada AL, Harris DB, Dunnett M, Hespel P. The creatine content of Creatine Serum and the change in the plasma concentration with ingestion of a single dose. *J Sports Sci.* 2004 Sep; 22 (9): 851–857.
60. Hausmann ON, Fouad K, Wallimann T, Schwab ME. Protective effects of oral creatine supplementation on spinal cord injury in rats. *Spinal Cord.* 2002 Sep; 40 (9): 449–456.
61. Hespel P, Op't Eijnde B, Van Leemputte M, Ursø B, Greenhaff PL, Labarque V, Dymarkowski S, Van Hecke P, Richter EA. Oral creatine supplementation facilitates the rehabilitation of disuse atrophy and alters the expression of muscle myogenic factors in humans. *J Physiol.* 2001 Oct 15; 536 (Pt 2): 625–633.
62. Hespel P, Derave W. Ergogenic effects of creatine in sports and rehabilitation. *Subcell Biochem.* 2007; 46: 245–59. Review
63. Holtzman D, Togliatti A, Khait I, Jensen F. Creatine increases survival and suppresses seizures in the hypoxic immature rat. *Pediatr Res.* 1998 Sep; 44 (3): 410–414.
64. Hülsemann J, Manz F, Wember T, Schöch G. Administration of creatine and creatinine with breast milk and infant milk preparations. *Klin Pädiatr.* 1987 Jul-Aug; 199 (4): 292–295.
65. Ingwall JS, Weiner CD, Morales MF, Davis E, Stockdale FE. Specificity of creatine in the control of muscle protein synthesis. *J Cell Biol.* 1974 Jul; 62 (1): 145–151.
66. Ingwall JS. Energy metabolism in heart failure and remodeling. *Cardiovasc Res.* 2008 Nov 5. [Epub ahead of print]
67. Ireland Z, Dickinson H, Snow R, Walker DW. Maternal creatine: does it reach the fetus and improve survival after an acute hypoxic episode in the spiny mouse (*Acomys cahirinus*)? *Am J Obstet Gynecol.* 2008 Apr; 198 (4): 431.e1–6.
68. Jäger R, Harris RC, Purpura M, Francaux M. Comparison of new forms of creatine in raising plasma creatine levels. *J Int Soc Sports Nutr.* 2007 Nov 12; 4: 17.
69. Jäger R, Metzger J, Lautmann K, Shushakov V, Purpura M, Geiss KR, Maassen N. The effects of creatine pyruvate and creatine citrate on performance during high intensity exercise. *J Int Soc Sports Nutr.* 2008 Feb 13; 5: 4.
70. Jones AM, Carter H, Pringle JS, Campbell IT. Effect of creatine supplementation on oxygen uptake kinetics during submaximal cycle exercise. *J Appl Physiol.* 2002 Jun; 92 (6): 2571–2577.
71. Kamber M, Koster M, Kreis R, Walker G, Boesch C, Hoppeler H. Creatine supplementation, part I: performance, clinical chemistry, and muscle volume. *Med Sci Sports Exerc.* 1999 Dec; 31 (12): 1763–1769.
72. Kay L, Nicolay K, Wieringa B, Saks V, Wallimann T. Direct evidence for the control of mitochondrial respiration by mitochondrial creatine kinase in oxidative muscle cells in situ. *J Biol Chem.* 2000 Mar 10; 275 (10): 6937–6944.
73. Kerkick C, Stout J, Campbell B, Wilborn C, Kreider R, Kalman D, Ziegenfuss T, Lopez H, Landis J, Ivy J, Antonio J. International society of sports nutrition position stand: nutrient timing. *J Int Soc Sports Nutr.* 2008 Oct 3; 5 (1): 17 (www.ijsn.com/content/5/1/17).
74. Kirov II, Fleysher L, Fleysher R, Patil V, Liu S, Gonen O. Age dependence of regional proton metabolites T2 relaxation times in the human brain at 3 T. *Magn Reson Med.* 2008 Oct; 60 (4): 790–795.
75. Klein AM, Ferrante RJ. The neuroprotective role of creatine. *Subcell Biochem.* 2007; 46: 205–243. Review
76. Kley RA, Vorgerd M, Tarnopolsky MA. Creatine for treating muscle disorders. *Cochrane Database Syst Rev.* 2007 Jan 24; (1): CD004760. Review.
77. Kley RA, Tarnopolsky MA, Vorgerd M. Creatine treatment in muscle disorders: a meta-analysis of randomized controlled trials. *J Neurol Neurosurg Psychiatry.* 2008 Apr; 79 (4): 366–367.
78. Klivenyi P, Ferrante RJ, Matthews RT, Bogdanov MB, Klein AM, Andreassen OA, Mueller G, Wermer M, Kaddurah-Daouk R, Beal MF. Neuroprotective effects of creatine in a transgenic animal model of amyotrophic lateral sclerosis. *Nat Med.* 1999 Mar; 5 (3): 347–350.
79. Knott A, Koop U, Mielke H, Reuschlein K, Peters N, Muhr GM, Lenz H, Wensorra U, Jaspers S, Kolbe L, Raschke T, Stäb F, Wenck H, Gallinat S. A novel treatment option for photoaging skin. *J Cosmet Dermatol.* 2008 Mar; 7 (1): 15–22.
80. Koga Y, Takahashi H, Oikawa D, Tachibana T, Denbow DM, Furuse M. Brain creatine functions to attenuate acute stress responses through GABAergic system in chicks. *Neuroscience.* 2005; 132 (1): 65–71.
81. Korzun WJ. Oral creatine supplements lower plasma homocysteine concentrations in humans. *Clin Lab Sci.* 2004 Spring; 17 (2): 102–106.
82. Köstler H, Landschütz W, Koeppe S, Seyfarth T, Lipke C, Sandstede J, Spindler M, von Kienlin M, Hahn D, Beer M. Age and gender dependence of human cardiac phosphorus metabolites determined by SLOOP 31P MR spectroscopy. *Magn Reson Med.* 2006 Oct; 56 (4): 907–911.
83. Kreider RB. Effects of creatine supplementation on performance and training adaptations. *Mol Cell Biochem.* 2003 Feb; 244 (1–2): 89–94. Review
84. Kreider RB, Melton C, Rasmussen CJ, Greenwood M, Lancaster S, Cantler EC, Milnor P, Almada AL. Long-term creatine supplementation does not significantly affect clinical markers of health in athletes. *Mol Cell Biochem.* 2003 Feb; 244 (1–2): 95–104.
85. Lenz H, Schmidt M, Welge V, Schlattner U, Wallimann T, Elsässer HP, Wittern KP, Wenck H, Stäb F, Blatt T. The creatine kinase system in human skin: protective effects of creatine against oxidative and UV damage in vitro and in vivo. *J Invest Dermatol.* 2005 Feb; 124 (2): 443–452.
86. Lenz H, Schmidt M, Welge V, Kueper T, Schlattner U, Wallimann T, Elsässer HP, Wittern KP, Wenck H, Staeb F, Blatt T. Inhibition of cytosolic and mitochondrial creatine kinase by siRNA in HaCaT- and HeLaS3-cells affects cell viability and mitochondrial morphology. *Mol Cell Biochem.* 2007 Dec; 306 (1–2): 153–162.
87. Louis M, Lebacqz J, Poortmans JR, Belpaire-Dethiou MC, Devogelaer JP, Van Hecke P, Goubel F, Francaux M. Beneficial effects of creatine supplementation in dystrophic patients. *Muscle Nerve.* 2003 May; 27 (5): 604–610.
88. McCall W, Persky AM. Pharmacokinetics of creatine. *Subcell Biochem.* 2007; 46: 261–273. Review
89. McClung JM, Hand GA, Davis JM, Carson JA. Effect of creatine supplementation on cardiac muscle of exercise-stressed rats. *Eur J Appl Physiol.* 2003 Mar; 89 (1): 26–33. Erratum in: *Eur J Appl Physiol.* 2003 May; 89 (3–4): 406.
90. McGuine TA, Sullivan JC, Bernhardt DA. Creatine supplementation in Wisconsin high school athletes. *WMJ.* 2002; 101 (2): 25–30.
91. McMorris T, Harris RC, Swain J, Corbett J, Collard K, Dyson RJ, Dye L, Hodgson C, Draper N. Effect of creatine supplementation and sleep deprivation, with mild exercise, on cognitive and psychomotor performance, mood state, and plasma concentrations of catecholamines and cortisol. *Psychopharmacology (Berl).* 2006 Mar; 185 (1): 93–103.

92. McMorris T, Mielcarz G, Harris RC, Swain JP, Howard A. Creatine supplementation and cognitive performance in elderly individuals. *Neuropsychol Dev Cogn B Aging Neuropsychol Cogn*. 2007a Sep; 14 (5): 517–528.
93. McMorris T, Harris RC, Howard AN, Langridge G, Hall B, Corbett J, Dicks M, Hodgson C. Creatine supplementation, sleep deprivation, cortisol, melatonin and behavior. *Physiol Behav*. 2007b Jan 30; 90 (1): 21–28.
94. Mertschek B, Gloxhuber Ch, Wallimann T. Gesundheitliche Bewertung von Kreatin als Nahrungsmittel. *Deutsche Chemische Rundschau* 2001; 97 (7): 250–257.
95. Meyer LE, Machado LB, Santiago AP, da-Silva WS, De Felice FG, Holub O, Oliveira MF, Galina A. Mitochondrial creatine kinase activity prevents reactive oxygen species generation: antioxidant role of mitochondrial kinase-dependent ADP re-cycling activity. *J Biol Chem*. 2006 Dec 8; 281 (49): 37361–37371.
96. Minami SB, Yamashita D, Ogawa K, Schacht J, Miller JM. Creatine and tempol attenuate noise-induced hearing loss. *Brain Res*. 2007 May 7; 1148: 83–89.
97. Nelson AG, Day R, Glickman-Weiss EL, Hegsted M, Kokkonen J, Sampson B. Creatine supplementation alters the response to a graded cycle ergometer test. *Eur J Appl Physiol*. 2000 Sep; 83 (1): 89–94.
98. Neumann D, Schlattner U, Wallimann T. A molecular approach to the concerted action of kinases involved in energy homeostasis. *Biochem Soc Trans*. 2003 Feb; 31 (Pt 1): 169–1674. Review
99. a) NINDS NET-PD Investigators. A randomized, double-blind, futility clinical trial of creatine and minocycline in early Parkinson disease. *Neurology*. 2006 Mar 14; 66 (5): 664–671.
99. b) NINDS NET-PD Investigators. A pilot clinical trial of creatine and minocycline in early Parkinson disease: 18-month results. *Clin Neuropharmacol*. 2008 May-Jun; 31 (3): 141–150.
100. Norman K, Stübler D, Baier P, Schütz T, Ocran K, Holm E, Lochs H, Pirlich M. Effects of creatine supplementation on nutritional status, muscle function and quality of life in patients with colorectal cancer—a double blind randomised controlled trial. *Clin Nutr*. 2006 Aug; 25 (4): 596–605.
101. O'Connor RS, Steeds CM, Wiseman RW, Pavlath GK. Phosphocreatine as an energy source for actin cytoskeletal rearrangements during myoblast fusion. *J Physiol*. 2008 Jun 15; 586 (Pt 12): 2841–2853.
102. O'Dea JA. Consumption of nutritional supplements among adolescents: usage and perceived benefits. *Health Educ Res*. 2003 Feb; 18 (1): 98–107.
103. O'Gorman E, Piendl T, Müller M, Brdiczka D, Wallimann T. Mitochondrial intermembrane inclusion bodies: the common denominator between human mitochondrial myopathies and creatine depletion, due to impairment of cellular energetics. *Mol Cell Biochem*. 1997a Sep; 174 (1–2): 283–289.
104. O'Gorman E, Fuchs KH, Tittmann P, Gross H, Wallimann T. Crystalline mitochondrial inclusion bodies isolated from creatine depleted rat soleus muscle. *J Cell Sci*. 1997b Jun; 110 (Pt 12): 1403–1411.
105. O'Gorman E, Beutner G, Dolder M, Korotky AP, Brdiczka D, Wallimann T. The role of creatine kinase in inhibition of mitochondrial permeability transition. *FEBS Lett*. 1997c Sep 8; 414 (2): 253–257.
106. Olsen S, Aagaard P, Kadi F, Tufekovic G, Verney J, Olesen JL, Suetta C, Kjaer M. Creatine supplementation augments the increase in satellite cell and myonuclei number in human skeletal muscle induced by strength training. *J Physiol*. 2006 Jun 1; 573 (Pt 2): 525–34. Erratum in: *J Physiol*. 2006 Sep 15; 575 (Pt 3): 971.
107. Ostojic SM. Creatine supplementation in young soccer players. *Int J Sport Nutr Exerc Metab*. 2004 Feb; 14 (1): 95–103.
108. Passaquin AC, Renard M, Kay L, Challet C, Mokhtarian A, Wallimann T, Rungg UT. Creatine supplementation reduces skeletal muscle degeneration and enhances mitochondrial function in mdx mice. *Neuromuscul Disord*. 2002 Feb; 12 (2): 174–182.
109. Pastoris O, Foppa P, Catapano M, Dossena M. Metabolite concentrations in skeletal muscle of different aged rats submitted to hypoxia and pharmacological treatment with nicergoline. *Exp Gerontol*. 1998 Jun; 33 (4): 303–318.
110. Pastoris O, Boschi F, Verri M, Baiardi P, Felzani G, Vecchiet D, Dossena M, Catapano M. The effects of aging on enzyme activities and metabolite concentrations in skeletal muscle from sedentary male and female subjects. *Exp Gerontol*. 2000 Feb; 35 (1): 95–104.
111. Persky AM, Rawson ES. Safety of creatine supplementation. *Subcell Biochem*. 2007; 46: 275–289. Review
112. Pischel I, Gastner T. Creatine - its chemical synthesis, chemistry, and legal status. *Subcell Biochem*. 2007; 46: 291–307. Review
113. Poortmans JR, Francaux M. Adverse effects of creatine supplementation: fact or fiction? *Sports Med*. 2000 Sep; 30 (3): 155–170. Review
114. Prass K, Royl G, Lindauer U, Freyer D, Megow D, Dirnagl U, Stöckler-Ipsiroglu G, Wallimann T, Priller J. Improved reperfusion and neuroprotection by creatine in a mouse model of stroke. *J Cereb Blood Flow Metab*. 2007 Mar; 27 (3): 452–459. Erratum in: *J Cereb Blood Flow Metab*. 2007 Jun; 27 (6): 1290.
115. Pulido SM, Passaquin AC, Leijendekker WJ, Challet C, Wallimann T, Rungg UT. Creatine supplementation improves intracellular Ca²⁺ handling and survival in mdx skeletal muscle cells. *FEBS Lett*. 1998 Nov 20; 439 (3): 357–362.
116. Rabchevsky AG, Sullivan PG, Fugaccia I, Scheff SW. Creatine diet supplement for spinal cord injury: influences on functional recovery and tissue sparing in rats. *J Neurotrauma*. 2003 Jul; 20 (7): 659–669.
117. Rae C, Digney AL, McEwan SR, Bates TC. Oral creatine monohydrate supplementation improves brain performance: a double-blind, placebo-controlled, cross-over trial. *Proc Biol Sci*. 2003 Oct 22; 270 (1529): 2147–2150.
118. Rakpongiriri K, Sawangkoon S. Protective effect of creatine supplementation and estrogen replacement on cardiac reserve function and antioxidant reservation against oxidative stress in exercise-trained ovariectomized hamsters. *Int Heart J*. 2008 May; 49 (3): 343–354.
119. Rawson ES, Lieberman HR, Walsh TM, Zuber SM, Harhart JM, Matthews TC. Abstract. Creatine supplementation does not improve cognitive function in young adults. *Physiol Behav*. 2008 Sep 3; 95 (1–2): 130–134.
120. Richards MP, Schmitz RW. Isotope evidence for the diet of the Neanderthal type specimen. *Antiquity* 2008; 82: 553–559.
121. Robinson TM, Sewell DA, Hultman E, Greenhaff PL. Role of submaximal exercise in promoting creatine and glycogen accumulation in human skeletal muscle. *J Appl Physiol*. 1999 Aug; 87 (2): 598–604.
122. Ruda MYA, Samarenko MB, Afonskaya NI, Saks VA. Reduction of ventricular arrhythmias by phosphocreatine (Neoton) in patients with acute myocardial infarction. *Am Heart J*. 1988 Aug; 116 (2 Pt 1): 393–397.
123. Sakellaris G, Kotsiou M, Tamiolaki M, Kalostos G, Tsapaki E, Spanaki M, Spilioti M, Charissis G, Evangelidou A. Prevention of complications related to traumatic brain injury in children and adolescents with creatine administration: an open label randomized pilot study. *J Trauma*. 2006 Aug; 61 (2): 322–329.
124. Sakellaris G, Nasis G, Kotsiou M, Tamiolaki M, Charissis G, Evangelidou A. Prevention of traumatic headache, dizziness and fatigue with creatine administration. A pilot study. *Acta Paediatr*. 2008 Jan; 97 (1): 31–34.
125. Saks V, Favier R, Guzun R, Schlattner U, Wallimann T. Molecular system bioenergetics: regulation of substrate supply in response to heart energy demands. *J Physiol*. 2006a Dec 15; 577 (Pt 3): 769–777. Review.
126. Saks V, Dzeja P, Schlattner U, Vendelin M, Terzic A, Wallimann T. Cardiac system bioenergetics: metabolic basis of the Frank-Starling law. *J Physiol*. 2006b Mar 1; 571 (Pt 2): 253–273. Review.
127. Saks V, Kaambre T, Guzun R, Anmann T, Sikk P, Schlattner U, Wallimann T, Aliev M, Vendelin M. The creatine kinase phosphotransfer network: thermodynamic and kinetic considerations, the impact of the mitochondrial outer membrane and modelling approaches. *Subcell Biochem*. 2007; 46: 27–65. Review
128. Santos RV, Bassit RA, Caperuto EC, Costa Rosa LF. The effect of creatine supplementation upon inflammatory and muscle soreness markers after a 30km race. *Life Sci*. 2004 Sep 3; 75 (16): 1917–1924.
129. Schedel JM, Tanaka H, Kiyonaga A, Shindo M, Schutz Y. Acute creatine loading enhances human growth hormone secretion. *J Sports Med Phys Fitness*. 2000 Dec; 40 (4): 336–342.
130. Schulze A. Creatine deficiency syndromes. *Mol Cell Biochem*. 2003 Feb; 244 (1–2): 143–150. Review.
131. Schulze A, Battini R. Pre-symptomatic treatment of creatine biosynthesis defects. *Subcell Biochem*. 2007; 46: 167–181. Review.
132. Schlattner U, Tokarska-Schlattner M, Wallimann T. Mitochondrial creatine kinase in human health and disease. *Biochim Biophys Acta*. 2006 Feb; 1762 (2): 164–180.
133. Sestili P, Martinelli C, Bravi G, Piccoli G, Curci R, Battistelli M, Falcieri E, Agostini D, Giocacchini AM, Stocchi V. Creatine supplementation affords cytoprotection in oxidatively injured cultured mammalian cells via direct antioxidant activity. *Free Radical Biol Med*. 2006 Mar 1; 40 (5): 837–849.
134. Sewell DA, Robinson TM, Greenhaff PL. Creatine supplementation does not affect human skeletal muscle glycogen content in the absence of prior exercise. *J Appl Physiol*. 2008 Feb; 104 (2): 508–512.
135. Shao A, Hathcock JN. Risk assessment for creatine monohydrate. *Regul Toxicol Pharmacol*. 2006 Aug; 45 (3): 242–251.
136. Shefner JM, Cudkowicz ME, Schoenfeld D, Conrad T, Taft J, Chilton M, Urbinelli L, Qureshi M, Zhang H, Pestronk A, Caress J, Donofrio P, Sorenson E, Bradley W, Lomen-Hoerth C, Piro E, Reznica K, Ross M, Pascuzzi R, Heiman-Patterson T, Tandan R, Mitsumoto H, Rothstein J, Smith-Palmer T, MacDonald D, Burke D; NEALS Consortium. A clinical trial of creatine in ALS. *Neurology*. 2004 Nov 9; 63 (9): 1656–1661.
137. Shin JB, Strejiger F, Beynon A, Peters T, Gadzala L, McMillen D, Bystrom C, Van der Zee CE, Wallimann T, Gillespie PG. Hair bundles are specialized for ATP delivery via creatine kinase. *Neuron*. 2007 Feb 1; 53 (3): 371–386.
138. Shulman RG, Rothman DL, Behar KL, Hyder F. Energetic basis of brain activity: implications for neuroimaging. *Trends Neurosci*. 2004 Aug; 27 (8): 489–95. Review
139. Smith SA, Mountain SJ, Matott RP, Zientara GP, Jolesz FA, Fielding RA. Creatine supplementation and age influence muscle metabolism during exercise. *J Applied Physiol*. 1998; 85: 1349–1356.
140. Smith SA, Mountain SJ, Zientara GP, Fielding RA. Use of phosphocreatine kinetics to determine the influence of creatine on muscle mitochondrial respiration: an in vivo ³¹P-MRS study of oral creatine ingestion. *J Appl Physiol*. 2004 Jun; 96 (6): 2288–2292.

141. Smith AE, Walter AA, Herda TJ, Ryan ED, Moon JR, Cramer JT, Stout JR. Effects of creatine loading on electromyographic fatigue threshold during cycle ergometry in college-aged women. *J Int Soc Sports Nutr.* 2007 Nov 26; 4: 20. open access: www.jissn.com/content/4/1/20
142. Steeghs K, Benders A, Oerlemans F, de Haan A, Heerschap A, Ruitenbeek W, Jost C, van Deursen J, Perryman B, Pette D, Brückwilder M, Koudijs J, Jap P, Veerkamp J, Wieringa B. Altered Ca²⁺ responses in muscles with combined mitochondrial and cytosolic creatine kinase deficiencies. *Cell.* 1997 Apr 4; 89 (1): 93–103.
143. Stephens FB, Constantin-Teodosiu D, Greenhaff PL. New insights concerning the role of carnitine in the regulation of fuel metabolism in skeletal muscle. *J Physiol.* 2007 Jun 1; 581 (Pt 2): 431–444. Review
144. Stockler S, Schutz PW, Salomons GS. Cerebral creatine deficiency syndromes: clinical aspects, treatment and pathophysiology. *Subcell Biochem.* 2007; 46: 149–166. Review
145. Stout J, Eckerson J, Ebersole K, Moore G, Perry S, Housh T, Bull A, Cramer J, Batheja A. Effect of creatine loading on neuromuscular fatigue threshold. *J Appl Physiol.* 2000 Jan; 88 (1): 109–112.
146. Streijger F, Oerlemans F, Ellenbroek BA, Jost CR, Wieringa B, Van der Zee CE. Structural and behavioural consequences of double deficiency for creatine kinases BCK and UbCKmit. *Behav Brain Res.* 2005 Feb 28; 157 (2): 219–234.
147. Sullivan PG, Geiger JD, Mattson MP, Scheff SW. Dietary supplement creatine protects against traumatic brain injury. *Ann Neurol.* 2000 Nov; 48 (5): 723–729.
148. Srytouiik DG, Bell GJ. Acute creatine monohydrate supplementation: a descriptive physiological profile of responders vs. nonresponders. *J Strength Cond Res.* 2004 Aug; 18 (3): 610–617.
149. Tarnopolsky MA, Beal MF. Potential for creatine and other therapies targeting cellular energy dysfunction in neurological disorders. *Ann Neurol.* 2001 May; 49 (5): 561–574. Review
150. Tarnopolsky MA, Mahoney DJ, Vajsar J, Rodriguez C, Doherty TJ, Roy BD, Biggar D. Creatine monohydrate enhances strength and body composition in Duchenne muscular dystrophy. *Neurology.* 2004 May 25; 62 (10): 1771–1777.
151. Tarnopolsky MA. Clinical use of creatine in neuromuscular and neurometabolic disorders. *Subcell Biochem.* 2007; 46: 183–204. Review
152. Tarnopolsky MA, Safdar A. The potential benefits of creatine and conjugated linoleic acid as adjuncts to resistance training in older adults. *Appl Physiol Nutr Metab.* 2008 Feb; 33 (1): 213–227. Review
153. Tarnopolsky MA. Nutritional consideration in the aging athlete. *Clin J Sport Med.* 2008 Nov; 18 (6): 531–538.
154. ten Hove M, Neubauer S. The application of NMR spectroscopy for the study of heart failure. *Curr Pharm Des.* 2008; 14 (18): 1787–1797. Review
155. Terjung RL, Clarkson P, Eichner ER, Greenhaff PL, Hespel PJ, Israel RG, Kraemer WJ, Meyer RA, Spriet LL, Tarnopolsky MA, Wagenmakers AJ, Williams MH. American College of Sports Medicine roundtable. The physiological and health effects of oral creatine supplementation. *Med Sci Sports Exerc.* 2000 Mar; 32 (3): 706–717.
156. Tronconi L, Saks V. Physiology, Biochemistry and Pharmacology of Creatine Phosphate. Volume of the Internatl. Meeting on Phosphocreatine in Cardiology and Cardiac-Surgery April 14–15th 1989 (Tronconi, L., and Saks, V. eds.) I.R.C.C.S. Policlinico San Matteo Divisione di Cardiologia University di PAVIA Press (1989).
157. Uzzan M, Nechrebeki J, Labuza TP. Thermal and storage stability of nutraceuticals in a milk beverage dietary supplement. *J Food Sci.* 2007 Apr; 72 (3): E109–114.
158. Valastro B, Dekundy A, Danysz W, Quack G. Oral creatine supplementation attenuates L-DOPA-induced dyskinesia in 6-hydroxydopamine-lesioned rats. *Behav Brain Res.* 2008 Aug 12. [Epub ahead of print]
159. Vandenberghe K, Gillis N, Van Leemputte M, Van Hecke P, Vanstapel F, Hespel P. Caffeine counteracts the ergogenic action of muscle creatine loading. *J Appl Physiol.* 1996 Feb; 80 (2): 452–457.
160. Vandenberghe K, Goris M, Van Hecke P, Van Leemputte M, Vangerven L, Hespel P. Long-term creatine intake is beneficial to muscle performance during resistance training. *J Appl Physiol.* 1997 Dec; 83 (6): 205–263.
161. van Leemputte M, Vandenberghe K, Hespel P. Shortening of muscle relaxation time after creatine loading. *J Appl Physiol.* 1999 Mar; 86 (3): 840–844.
162. Vierck JL, Icenogge DL, Bucci L, Dodson MV. The effects of ergogenic compounds on myogenic satellite cells. *Med Sci Sports Exerc.* 2003 May; 35 (5): 769–776.
163. Volek JS, Kraemer WJ, Bush JA, Boetes M, Incledon T, Clark KL, Lynch JM. Creatine supplementation enhances muscular performance during high-intensity resistance exercise. *J Am Diet Assoc.* 1997 Jul; 97 (7): 765–770.
164. Volek JS, Duncan ND, Mazzetti SA, Staron RS, Putukian M, Gómez AL, Pearson DR, Fink WJ, Kraemer WJ. Performance and muscle fiber adaptations to creatine supplementation and heavy resistance training. *Med Sci Sports Exerc.* 1999 Aug; 31 (8): 1147–1156.
165. Wallimann T, Wyss M, Brdiczka D, Nicolay K, Eppenberger HM. Intracellular compartmentation, structure and function of creatine kinase isoenzymes in tissues with high and fluctuating energy demands: the 'phosphocreatine circuit' for cellular energy homeostasis. *Biochem J.* 1992 Jan 1; 281 (Pt 1): 21–40. Review.
166. Wallimann T, Hemmer W. Creatine kinase in non-muscle tissues and cells. *Mol Cell Biochem.* 1994 Apr–May; 133–134: 193–220. Review.
167. Wallimann T. Creatine: a cheap ergogenic supplement with great potential for health and disease. *Subcell. Biochem.* 2007; 46: 1–17.
168. Wallimann T, Tokarska-Schlattner M, Neumann D, Epanand RM, Epanand RF, Andres RH, Widmer HR, Horneemann T, Saks VA, Agarkova I, Schlattner U. The phospho-creatine circuit: molecular and cellular physiology of creatine kinases, sensitivity to free radicals and enhancement by creatine supplementation. In: *Molecular Systems Bioenergetics: Energy for Life, Basic Principles, Organization and Dynamics of Cellular Energetics* (Saks, V.A., Editor), Wiley-VCH, Weinheim, Germany, 2007 pp. 195–264.
169. Walter MC, Lochmüller H, Reilich P, Klopstock T, Huber R, Hartard M, Hennig M, Pongratz D, Müller-Felber W. Creatine monohydrate in muscular dystrophies: A double-blind, placebo-controlled clinical study. *Neurology.* 2000 May 9; 54 (9): 1848–1850.
170. Watanabe A, Kato N, Kato T. Effects of creatine on mental fatigue and cerebral hemoglobin oxygenation. *Neurosci Res.* 2002 Apr; 42 (4): 279–285.
171. Watchko JF, Daoud MJ, Sieck GC, LaBella JJ, Ameredes BT, Koretsky AP, Wieringa B. Combined myofibrillar and mitochondrial creatine kinase deficiency impairs mouse diaphragm isotonic function. *J Appl Physiol.* 1997 May; 82 (5): 1416–1423.
172. Watt KO, Garnham AP, Snow RJ. Total creatine content and creatine transporter gene expression in vegetarians prior to and following creatine supplementation. *J Sports Nutr Exercise Metabol* 2004, 14: 517–531.
173. Wilken B, Ramirez JM, Probst I, Richter DW, Hanefeld F. Creatine protects the central respiratory network of mammals under anoxic conditions. *Pediatr Res.* 1998 Jan; 43 (1): 8–14.
174. Wilken B, Ramirez JM, Probst I, Richter DW, Hanefeld F. Anoxic ATP depletion in neonatal mice brainstem is prevented by creatine supplementation. *Arch Dis Child Fetal Neonatal Ed.* 2000 May; 82 (3): F224–227.
175. Wyss M, Smeitink J, Wevers RA, Wallimann T. Mitochondrial creatine kinase: a key enzyme of aerobic energy metabolism. *Biochim Biophys Acta.* 1992 Sep 25; 1102 (2): 119–166. Review.
176. Wyss M, Kaddurah-Daouk R. Creatine and creatinine metabolism. *Physiol Rev.* 2000 Jul; 80 (3): 1107–1213. Review
177. Wyss M, Schulze A. Health implications of creatine: can oral creatine supplementation protect against neurological and atherosclerotic disease? *Neuroscience.* 2002; 112 (2): 243–260. Review.
178. Wyss M, Braissant O, Pischel I, Salomons GS, Schulz A, Stöckler S, Wallimann T. Creatine and creatine kinase in health and disease – a bright future ahead. *Subcell. Biochem.* (2007) 46: 309–335.
179. Zhang W, Narayanan M, Friedlander RM. Additive neuroprotective effects of minocycline with creatine in a mouse model of ALS. *Ann Neurol.* 2003 Feb; 53 (2): 267–270.
180. Zhu S, Li M, Figueroa BE, Liu A, Stavrovskaya IG, Pasinelli P, Beal MF, Brown RH Jr, Kristal BS, Ferrante RJ, Friedlander RM. Prophylactic creatine administration mediates neuroprotection in cerebral ischemia in mice. *J Neurosci.* 2004 Jun 30; 24 (26): 5909–5912.

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