

Evolutionäre Ernährungswissenschaft und „steinzeitliche“ Ernährungsempfehlungen – Stein der alimentären Weisheit oder Stein des Anstoßes?

Teil 2: Ethnographische Befunde und ernährungswissenschaftliche Implikationen

Alexander Ströhle und Andreas Hahn, Abteilung Ernährungsphysiologie und Humanernährung, Institut für Lebensmittelwissenschaft, Zentrum Angewandte Chemie der Universität Hannover

Ernährungs-Umschau 53 (2006), S. 52 ff.

Literatur:

1. *Bayertz K*: Evolution und Ethik. Größe und Grenzen eines philosophischen Forschungsprogramms. In: *Bayertz K (Hrsg.): Evolution und Ethik*. Reclam, Stuttgart 1993, S. 7-36
2. *Boyden S*: Western civilization in biological perspective. Patterns in Biohistory. Oxford Science Publications, Oxford 1987
3. *Brand-Miller JC, Colagiuri S*: Evolutionary aspects of diet and insulin resistance. *World Rev Nutr Diet* 84: 74-105, 1999
4. *Burkitt DP, Eaton SB*: Putting the wrong fuel in the tank. *Nutrition* 5: 189-91, 1989
5. *Colagiuri S, Brand Miller J*: The 'carnivore connection' – evolutionary aspects of insulin resistance. *Eur J Clin Nutr* 56 (Suppl 1): S30-5, 2002
6. *Bunge M, Ardila R*: Philosophie der Psychologie. Mohr, Tübingen 1990 [engl. Orig. 1987]
7. *Cordain L, Eaton SB, Miller JB, Mann N, Hill K*: The paradoxical nature of hunter-gatherer diets: meat-based, yet non-atherogenic. *Eur J Clin Nutr* 56 (Suppl 1): S42-52, 2002
8. *Cordain L, Eaton SB, Sebastian A, Mann N, Lindeberg S, Watkins BA, O'Keefe JH, Brand-Miller J*: Origins and evolution of the Western diet: health implications for the 21st century. *Am J Clin Nutr* 81: 341-54, 2005
9. *Cordain L, Miller JB, Eaton SB, Mann N, Holt SH, Speth JD*: Plant-animal subsistence ratios and macronutrient energy estimations in worldwide hunter-gatherer diets. *Am J Clin Nutr* 71: 682-92, 2000
10. *Cordain L*: The paleo diet: Lose weight and get healthy by eating the food you were designed to eat. John Wiley & Sons Inc., New York 2002
11. *Cordain L*: The nutritional characteristics of a contemporary diet based upon paleolithic food groups. *JANA* 5: 15-24, 2000
12. *Day RL, Laland KN, Odling-Smee FJ*: Rethinking adaptation: the niche-construction perspective. *Perspect Biol Med* 46: 80-95, 2003
13. *Deutsche Gesellschaft für Ernährung (DGE), Österreichische Gesellschaft für Ernährung (ÖGE), Schweizerische Gesellschaft für Ernährung (SGE), Schweizerische Vereinigung für Ernährung (SVE)*: Referenzwerte für die Nährstoffzufuhr. 1. Auflage, Umschau/Braus, Frankfurt/Main 2000
14. *Eaton SB, Cordain L, Lindeberg S*: Evolutionary health promotion: a consideration of common counterarguments. *Prev Med* 34: 119-23, 2002
15. *Eaton SB, Eaton SB III, Konner MJ*: Paleolithic nutrition revisited: a twelve-year retrospective on its nature and implications. *Eur J Clin Nutr* 51: 207-16, 1997
16. *Eaton SB, Eaton SB III, Cordain L*: Evolution, diet, and health. In: *Ungar PS, Teaford MF (eds.): Human diet. Its origin and evolution*. Bergin & Garvey, Westport, Connecticut/London 2002, pp. 7-17
17. *Eaton SB, Konner M, Shostak M*: Stone agers in the fast lane: chronic degenerative diseases in evolutionary perspective. *Am J Med* 84: 739-49, 1988
18. *Eaton SB, Konner M*: Paleolithic nutrition. A consideration of its nature and current implications. *N Engl J Med* 312: 283-9, 1985
19. *Eaton SB*: Humans, lipids and evolution. *Lipids* 27: 814-20, 1992
20. *Eaton SB*: Primitive health. *J Med Assoc Ga* 80: 137-40, 1991
21. *Ehrlich PR*: Human Nature. Genes, cultures, and the human prospect. Island Press, Washington DC 2000
22. *Foley R*: Hominids, humans and hunter-gatherers: an evolutionary perspective. In: *Ingold T, Riches D, Woodburn J (eds.): Hunters and gatherers: history, evolution and social change*. Vol 1, St. Martin's Press, New York 1988, pp. 207-221
23. *Froment A*: Evolutionary biology and health of hunter-gatherer populations. In: *Panther-Brick C, Layton RH, Rowley-Conway PR (eds.): Hunter-Gatherers. An interdisciplinary perspective*. Cambridge University Press, Cambridge 2001, pp.239-266
24. *Gray JP*: A corrected ethnographic atlas. *World Cultures J* 10: 24-85, 1999
25. *Gröber U*: Orthomolekulare Medizin. Wissenschaftliche Verlagsgesellschaft, Stuttgart 2002
26. *Hahn A, Ströhle A*: Die Steinzeiterernährung: ein (un)zeitgemäßes Ernährungsprogramm? In: *Heseker H, Stehle B, Oberritter H (Hrsg.): Tagungsband zur Arbeitstagung der DGE 2005. Aktuelle Aspekte in der Ernährungs- und -beratung*. Bonn, 2005 S. 14-21
27. *Henke W, Roth H*: Paläoanthropologie. Springer, Berlin/Heidelberg/New York 1994
28. *Hill KR, Hawkes K, Hurtado M, Kaplan H*: Seasonal variance in the diet of Ache hunter-gatherers in eastern Paraguay. *Hum Ecol* 12: 101-135, 1984
29. *Hill KR, Hurtado AM*: Ache Life History: The Ecology and Demography of a Foraging People. De Gruyter, New York 1996
30. *Ho K-J*: The Massai of East Africa: Some Unique biological characteristics. *Arch Path* 91: 387-410, 1971
31. *Hu FB, Willett WC*: Optimal diets for prevention of coronary heart disease. *JAMA* 288: 2569-78, 2002
32. *Hurtado AM, Hill KR*: Seasonality in a foraging society: variation in diet, work effort, fertility, and sexual division of labour among the Hiwi of Venezuela. *J Anthropol Res* 46: 293-346, 1990
33. *Jenike MR*: Nutritional ecology: diet, physical activity and body size. In: *Panther-Brick C, Layton RH, Rowley-Conway PR (eds.): Hunter-Gatherers. An interdisciplinary perspective*. Cambridge University Press, Cambridge 2001 pp. 205-238
34. *Jenkins DJ, Popovich DG, Kendall CW, Vidgen E, Tariq N, Ransom TP, Wolever TM, Vuksan V, Mehling CC, Boctor DL, Bolognesi C, Huang J, Patten R*: Effect of a diet high in vegetables, fruit, and nuts on serum lipids. *Metabolism* 46: 530-7, 1997
35. *Jenkins DJ, Kendall CW, Marchie A, Jenkins AL, Connelly PW, Jones PJ, Vuksan V*: The Garden of Eden – plant based diets, the genetic drive to conserve cholesterol and its implications for heart disease in the 21st century. *Comp Biochem Physiol A Mol Integr Physiol* 136: 141-51, 2003
36. *Kaplan H, Hill K, Lancaster J, Hurtado AM*: A theory of human life history evolution: diet, intelligence, and longevity. *Evol Anthropol* 9: 156-85, 2000
37. *Karg G*: Ernährungssituation in Deutschland. In: *Deutsche Gesellschaft für Ernährung (Hrsg.): Ernährungsbericht 2004*, Bonn 2004
38. *Kelly RL*: The Foraging Spectrum: Diversity in Hunter-Gatherer Lifeways. Smithsonian Institution Press, Washington DC 1995
39. *Klein S, Sheard NF, Pi-Sunyer X, Daly A, Wylie-Rosett J, Kulkarni K, Clark NG*: American Diabetes Association; North American Association for the Study of Obesity; American Society for Clinical Nutrition: Weight management through lifestyle modification for the prevention and management of type 2 diabetes:

- rationale and strategies. A statement of the American Diabetes Association, the North American Association for the Study of Obesity, and the American Society for Clinical Nutrition. *Am J Clin Nutr* 80: 257-63, 2004
40. Kuhn SL, Stiner MC: The antiquity of hunter-gatherers. In: *Panther-Brick C, Layton RH, Rowley-Conwy PR (eds.): Hunter-Gatherers. An interdisciplinary perspective.* Cambridge University Press, Cambridge 2001, pp. 99-142
 41. Laland KN, Olding-Smee J, Feldman MW: Niche construction, biological evolution, and cultural change. *Behav Brain Sci* 23: 131-46, 2000
 42. Laland KN, Olding-Smee FJ, Feldman MW: Niche construction, ecological inheritance, and cycles of contingency in evolution. In: *Oyama S, Griffiths PE, Gray RD (eds.): Cycles of Contingency: Developmental Systems and Evolution* Cambridge 2001, pp. 117-126
 43. Laubichler MD: Systemtheoretische Organismuskonzeptionen. In: *Krohs U, Toepfer G (Hrsg.): Philosophie der Biologie.* Suhrkamp, Frankfurt am Main 2005, S. 109-124
 44. Laubichler MD, Wagner GP: Organisms and character decomposition: steps towards an integrative theory of biology. *Phil Sci* 67 (Proceedings): 289-300, 2000
 45. Lee RB, Daly R: Foragers and others. In: *Lee RB, Daly R (eds.): The Cambridge Encyclopedia of Hunters and Gatherers.* Cambridge University Press, Cambridge 2004, pp 1-19
 46. Lee RB: *The !Kung San.* Cambridge University Press, Cambridge 1979
 47. Lee RB: What hunters do for a living, or how to make out on scarce resources. In: *Lee RB, DeVore I (eds.): Man the hunter.* Aldine, Chicago 1968, pp.30-48
 48. Leonard WR: Human Nutritional Evolution. In: *Stinson S, Bogin B, Huss-Ashmore R, O'Rourke D (eds.): Human Biology: An Evolutionary and Biocultural Perspective.* Wiley-Liss, New York/Chichester/Weinheim 2000, pp. 295-343
 49. Leonard WR, Robertson ML: Nutritional requirements and human evolution: A bioenergetics model. *Am J Hum Biol* 4: 179-195, 1992
 50. Lewontin RC: Gene, organism and environment: a new introduction. In: *Oyama S, Griffiths PE, Gray RD (eds.): Cycles of Contingency: Developmental Systems and Evolution* Cambridge 2001, pp. 55-57
 51. Lewontin RC: The organism as the subject and object of evolution. *Scientia* 118: 65-82, 1983
 52. Lindeberg S, Cordain L, Eaton SB: Biological and clinical potential of a paleolithic diet. *J Nutr Environ Med* 13: 149-60, 2003
 53. Lindeberg S, Eliasson M, Lindahl B, Ahren B: Low serum insulin in traditional Pacific Islanders – the Kitava Study. *Metabolism* 48: 1216-9, 1999
 54. Lindeberg S: Paleolithic diet ("stone age" diet). *Scand J Nutr* 49: 75-77, 2005
 55. Little MA: Human biology, health and ecology of nomadic Turkana pastoralists. In: *Leonard WR, Crawford MH (eds.): Human Biology of Pastoral Populations.* Cambridge University Press, Cambridge 2002, pp.151-182
 56. Marlowe FW: Hunter-gatherers and human evolution. *Evol Anthropol* 14: 54-67, 2005
 57. O'Dea K: Traditional diet and food preferences of Australian aboriginal hunter-gatherers. *Philos Trans R Soc Lond B Biol Sci* 334: 233-240, 1991
 58. O'Dea K, White NG, Sinclair AJ: An investigation of nutrition-related risk factors in an isolated aboriginal community in northern Australia: advantages of a traditionally-oriented lifestyle. *Med J Aust* 148: 177-180, 1988
 59. O'Keefe JH Jr, Cordain L: Cardiovascular disease resulting from a diet and lifestyle at odds with our Paleolithic genome: how to become a 21st-century hunter-gatherer. *Mayo Clin Proc* 79: 101-8, 2004
 60. Olding-Smee FJ, Laland KN, Feldman MW: *Niche Construction: The Neglected Process in Evolution.* Princeton University Press, Princeton 2003
 61. Oota H, Pakendorf B, Weiss G, von Haeseler A, Pookajorn S, Settheetham-Ishida W, Tiwawech D, Ishida T, Stoneking M: Recent origin and cultural reversion of a hunter-gatherer group. *PLoS Biol* 3: e71, 2005
 62. Panther-Brick C, Layton RH, Rowley-Conwy PR: Lines of enquiry. In: *Panther-Brick C, Layton RH, Rowley-Conwy PR (eds.): Hunter-Gatherers. An interdisciplinary perspective.* Cambridge University Press, Cambridge 2001, pp.239-266
 63. Potts R: Hominid hunters? Problems of identifying earliest hunter/gatherers. In: *Foley R (ed.): Hominid Evolution and Community Ecology. Prehistoric Human Adaptation in Biological Perspective.* Academic Press, London 1984, pp. 129-166
 64. Pyke GH, Pulliam HR, Charnow EL: Optimal foraging: A selective review of theory and tests. *Quart Rev Biol* 52: 137-154, 1977
 65. Richards MP: A brief review of the archaeological evidence for Palaeolithic and Neolithic subsistence. *Eur J Clin Nutr* 56: 1270-1278, 2002
 66. *Scientific Committee on Food (SCF): Opinion of the Scientific Committee on Food on the Tolerable upper Intake level of Vitamin E,* 2003
 67. *Scientific Committee on Food (SCF): Opinion of the Scientific Committee on Food on the Tolerable upper Intake level of Calcium,* 2003
 68. *Scientific Committee on Food (SCF): Opinion of the Scientific Committee on Food on the Tolerable upper Intake level of Zinc,* 2003
 69. *Scientific Committee on Food (SCF): Opinion of the Scientific Committee on Food on the Tolerable upper Intake level of Preformed Vitamin A (retinol and retinyl esters),* 2002
 70. *Scientific Committee on Food (SCF): Opinion of the Scientific Committee on Food on the Tolerable upper Intake level of Vitamin B₁,* 2001
 71. *Scientific Committee on Food (SCF): Opinion of the Scientific Committee on Food on the Tolerable upper Intake level of Vitamin B₂,* 2000
 72. *Scientific Committee on Food (SCF): Opinion of the Scientific Committee on Food on the Tolerable upper Intake level of Folate,* 2000
 73. Stotz K: Organismen als Entwicklungssysteme. In: *Krohs U, Toepfer G (Hrsg.): Philosophie der Biologie.* Suhrkamp, Frankfurt am Main 2005, S. 125-143
 74. Ströhle A, Hahn A: Evolutionäre Ernährungswissenschaft und „steinzeitliche“ Ernährungsempfehlungen: Stein der alimentären Weisheit oder Stein des Anstoßes? Teil 1: Konzept, Begründung und paläoanthropologische Befunde. *Ernähr-Umschau* 53: 10-16, 2006
 75. Ströhle A, Hahn A: Unwissenschaftliche Nachschrift oder die endlose und dabei doch beendbare Ernährungsdebatte. *Ernähr-Umschau* 52: 180-86, 2005
 76. WHO/FAO Expert Consultation: Diet, nutrition and the prevention of chronic diseases. WHO Technical Report Series No 916, Geneva 2003
 77. Worm N: Syndrom X oder ein Mammot auf den Teller. Mit Steinzeit-Diät aus der Wohlstandsfalle. Hallwag, München und Bern, 2000
 78. Zittermann A: Aktuelle Ernährungsempfehlungen vor dem Hintergrund prähistorischer Ernährungsweise. *Ernähr-Umschau* 50: 420-25, 2003