

ヒトの作業能力の評価法に関する研究：自転車運動におけるパワーと運動継続時間直角双曲線関係から推定される一定値パラメータ(W')の生理的規定要因

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文 献

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Astrand PO and Rodahl K 1970: Evaluation of physical performance on the basis of test. *In* Textbook of Work Physiology. McGraw-Hill, New York, pp354-390.

Balsom PD, Ekblomb B, Soderlund B, Sjodin B and Hultman B 1993: Creatine supplementation and dynamic high-intensity exercise. *Scand J Med Sci Sports* 3:143-149.

Birch R, Noble D and Greenhaff PL 1994: The influence of dietary creatine supplementation on performance during repeated bouts of maximal isokinetic cycling in man. *Eur J Appl Physiol* 69:268-270.

Bulbulian R, Jeong JW and Murphy M 1996: Comparison of anaerobic components of the Wingate and Critical Power tests in males and females. *Med Sci Sports Exerc* 28:1336-1341.

Davies CTM 1992: The physiology of cycling with reference to power output and muscularity. *Ann Physiol Anthropol* 11:309-312.

Davis JA and Brooks GA 1985: Anaerobic threshold: review of concept and directions for future research. *Med Sci Sports Exerc* 17: 6-34.

Delanghe J, Deslypere J-P, Debuyzere M, Robbrecht J, Wieme R and Vermeulen A 1989: Normal reference values for creatine, creatinine, and carnitine are lower in vegetarians. *Clin Chem* 35:1802-1803.

Earnest CP, Snell PG, Rodriguez R, Almada AL and Mitchell TL 1995: The effect of creatine monohydrate ingestion on anaerobic power indices, muscular strength and body composition. *Acta Physiol Scand* 153:207-209.

Fox EL 1979: *Sports Physiology*. CBS college Publishing, W.B. Saunders Company, Philadelphia, pp60-164.

Fukuba Y and Whipp BJ 1996: The endurance parameter ratio (curvature constant/fatigue threshold of the power-duration curve) and race variation strategy for distance running. *In* *The physiology and pathophysiology of exercise tolerance*. ed. Steinacker JM and Ward SA, Plenum Press, New York, pp321-328.

Fukuba Y and Whipp BJ 1999: The "fatigue threshold" ; Its physiological significance for assigning the transition from heavy to severe exercise. *Proceeding of 3rd international congress on physiological anthropology*, ed. Tokura H, Kyushu University Press, Fukuoka, pp341-346.

Gaesser GA and Brooks GA 1984: Metabolic bases of excess post-exercise oxygen consumption: a review. *Med Sci Sports Exerc* 16: 29-43.

Gaesser GA and Wilson LA 1988: Effects of continuous and interval training on the parameters of the power-endurance time relationship for high-intensity exercise. *Inter J Sport Med* 9:417-421.

Gollnick PD, Piehl K, Saubert IV CU, Armstrong RB and Saltin B 1972: Diet, exercise, and glycogen changes in human muscle fibers. *J Appl Physiol* 33: 421-425.

Green S and Dowson B 1993: Measurement of anaerobic capacities in humans. Definitions, limitations and unsolved problems. *Sports Med* 15:312-327.

Greenhaff PL, Bodin K, Soderlund K and Hultman E 1994: Effect of oral creatine supplementation on skeletal muscle phosphocreatine resynthesis. *Am J Physiol* 266:E725-E730.

Greenhaff PL, Casey A, Short AH, Harris R, Soderlund K and Hultman E 1993: Influence of oral creatine supplementation on muscle torque during repeated bout of maximal voluntary exercise in man. *Clin Sci* 84:565-571.

Harris RC, Soderlund K and Hultman E 1992: Elevation of creatine in resting and exercised muscle of normal subjects by creatine supplementation. *Clin Sci* 82:367-374.

Heigenhauser GJF, Sutton JR and Jones NL 1983: Effect of glycogen depletion on the ventilatory response to exercise, *J App Physiol, Resp Environ Exer Physiol* 54: 470-474.

Hermansen L and Medbo JI 1984: The relative significance of aerobic and anaerobic processes during maximal exercise of short duration. *In Physiological Chemistry of Training and Dettraining. Med Sports Sci* 17: ed. Marconnet P, Pootmans J and Hermansen L, Basel Karger, pp56-67.

Hill DW 1993: The critical power concept. *Sports Med* 16: 237-254.

Hill DW and Smith JC 1993: A comparison of methods of estimating anaerobic work capacity. *Ergonomics* 36: 1495-1500.

Hughes EF, Turner SC and Brooks GA 1982: Effects of glycogen depletion and pedaling speed on "anaerobic threshold". *J Appl Physiol* 52: 1598-1607.

Hughson RL, Orok CJ and Staudt LE 1984: A high velocity treadmill running test to assess endurance running potential. *Inter J Sports Med* 5: 23-25.

Hultman E and Gleenhaff PL 1992: Food stores and energy reserves: *In* *Endurance in Sports*. ed. Shephard RJ and Astrand P-O, Blackwell Science Ltd, Oxford, pp127-135.

Hultman E, Soderlund K, Timmons JA, Cederbland G and Greenhaff PL 1996: Muscle creatine loading in man. *J Appl Physiol* 81:232-237.

Ikai M and Fukunaga T 1968: Calculation of muscle strength per unit cross-sectional area of human muscle by means of ultrasonic measurement. *Int Z angew Physiol Einschl Arbeitsphysiol*: 26, 26-32.

Jacobs I, Bleue S and Goodman J 1997: Creatine ingestion increases anaerobic capacity and maximum accumulated oxygen deficit. *Can J Appl Physiol* 22: 231-243.

Jenkins DG and Quigley BM 1993: The influence of high-intensity exercise training on the W_{lim} - T_{lim} relationship. *Med Sci Sports Exer* 25: 275-282.

Knuttgen HG 1986: Human performance in high-intensity exercise with concentric muscle contractions. *Inter Sports Med* 7(suppl): 6-9.

Kreider RB, Ferreira M, Wilson M, Grindstaff P, Plink S, Reinardy j cantler E and Almada A L 1998: Effects of creatine supplementation on body composition, strength, and sprint performance. *Med Sci Sports Exerc* 30: 73-82.

Margaria R, Edwards HT and Dill DB 1933: The possible mechanisms of contracting and paying the oxygen debt and the role of the lactic acid in muscular contraction. *Am J Physiol* 106: 689-715.

Maughan RJ 1995: Creatine supplementation and exercise performance. *Int J Sports Nutr* 5: 94-101.

Maughan RJ and Nimmo MA 1984: The influence of variations in muscle fiber composition on muscle strength and cross-sectional area in untrained male. *J Physiol* 351: 299-311.

Medbo JJ, Mohn AC, Tabata I, Bahr R, Vaage O and Sejersted OM 1988: Anaerobic capacity determined by max accumulated O₂-deficit . *J Appl Physiol* 64: 50-60.

Monod H and Scherrer J 1965: The work capacity of a synergic muscular group. *Ergonomics* 8: 329-338.

Moritani T, Nagata A, Devries HA and Muro M 1981: Critical power as a measure of physical work capacity and anaerobic threshold. *Ergonomics* 24 :339-350.

Nebelsick-Gullett LJ, Housh TJ, Johnson GO and Bauge SM 1988: Comparison between methods of measuring anaerobic work capacity. *Ergonomics* 31: 1413-1419.

Odland L, MacDougall MJD, Tarnopolsky M, Elorriyage A, Borgmann A and Atkinson S 1997: Effect of oral creatine supplementation on muscle [PCr] and short-term maximal power output. *Med Sci Sports Exer* 29: 216-219.

Poole DC, Ward SA, Gardner GW and Whipp BJ 1988: Metabolic and respiratory profile of the upper limit for prolonged exercise in man. *Ergonomics* 31: 1265-1279.

Poole DC, Ward SA and Whipp BJ 1990: Effect of training on the metabolic and respiratory profile of heavy and exercise. *Eur J Appl Physiol* 59: 421-429.

Rossiter HB, Cannell ER and Jakeman PM 1996: The effect of oral creatine supplementation on the 1000-m performance of competitive rowers. *J Sports Sci* 14: 175-179.

Rowell LB 1993: Control of regional blood flow during dynamic exercise. *Human cardiovascular control*. Oxford University Press, New york, pp 204-254.

Sato H and Ohashi J 1988: Differences of fatigability for static contraction in human limb muscles. *J Anthropol Soc Nippon* 96: 137-145.

Sato H, Miura A, Kan A, Yanagawa K and Fukuba Y 1996: The relationship between the maximal O₂ deficit and the curvature constant parameter of the power-duration curve. *Physiologist* 39: A-78.

佐藤広徳, 福田 修, 辻 敏夫, 三浦 朗, 久野譜也, 佐藤陽彦, 福場良之 1998 : 超音波体肢横断面画像撮影システムの開発. *人間工学* 34 : 255-260, 1998.

Sloniger MA, Cureton KJ, Prior BM and Evans EM 1997: Anaerobic capacity and muscle activation during horizontal and uphill running. *J Appl Physiol* 83: 262-269.

Spriet LL 1995: Anaerobic metabolism during high-intensity exercise. *In: Hargreaves M ed. Human Kinetics. New York, pp8-17.*

Vandewalle H, Peres G and Monod H 1987: Standard anaerobic exercise test. *Sports Med*, 4, 268-289.

Wakayoshi K, Ikuta K, Yoshida T, Udo M, Moritani T, Mutoh Y and Miyashita M 1992: The determination and validity of critical velocity as swimming performance index in the competitive swimmer. *Eur J Appl Physiol* 64: 153-157.

Wasserman K, Whipp BJ, Koyal SN and Beaver WL 1973: Anaerobic threshold and respiratory gas exchange during exercise. *J Appl Physiol* 35: 236-243.

Wasserman K, Hansen JE, Sue DY and Whipp BJ 1987: Principles of exercise testing and interpretation. Lea & Feiger, Philadelphia. pp129-272.

Whipp BJ, Huntsman DJ, Storer T, Lamarra N and Wasserman K 1982: A constant which determines the duration of tolerance to high-intensity work. *Fed Proc* 41: 1591.

Whipp BJ and Ward SA 1994: Respiratory response of athletes to exercise: *In Oxford Textbook of Sports Medicine. ed. Harries M, Michel LJ, Stanish WD and Williams C, Oxford University Press, Oxford, pp13-25.*

William HC, Peter WG and William SB 1995: Effect of oral creatine supplementation on power output and fatigue during bicycle ergometry. *J Appl Physiol* 78:670-673.

Winter EM, Brookes FBC and Hamley EJ 1991: Maximal exercise performance and lean leg volume in men and women. *J Sports Sci* 9: 3-13.