

- lation of net amino acid deposition. *J Clin Invest* 1987; 79: 1062-1069
42. Louard RJ, Fryburg DA, Gelfand RA, Barrett EJ: Insulin sensitivity of protein and glucose metabolism in human forearm skeletal muscle. *J Clin Invest* 1992; 90: 2348-2354
 43. Gelfand RA, Barrett EJ: Effect of physiologic hyperinsulinemia on skeletal muscle protein synthesis and breakdown in man. *J Clin Invest* 1987; 80: 1-6
 44. Fryburg DA, Gelfand RA, Barrett EJ: Growth hormone acutely stimulates forearm muscle protein synthesis in normal humans. *Am J Physiol* 1991; 260: E499-E504
 45. Hasselgren PO, Warner BW, James JH, Takehara H, Fischer JE: Effect of insulin on amino acid uptake and protein turnover in skeletal muscle from septic rats. Evidence for insulin resistance of protein breakdown. *Arch Surg* 1987; 122: 228-233
 46. Inculet RI, Finley RJ, Duff JH, Pace R, Rose C, Groves AC, Woolf LI: Insulin decreases muscle protein loss after operative trauma in man. *Surgery* 1986; 99: 752-758
 47. Ryan NT, Blackburn GL, Clowes GHA Jr: Differential tissues sensitivity to elevated endogenous insulin levels during experimental peritonitis in rats. *Metabolism* 1974; 23: 1081-1089
 48. Ryan NT, George BC, Egdahl DH, Egdahl RH: Chronic tissue insulin resistance following hemorrhagic shock. *Ann Surg* 1974; 180: 402-407
 49. Sakurai Y, Ochiai M, Funabiki T: Significance of *in vivo* glucose kinetics using stable isotope tracers: alteration of glucose kinetics in humans during critical illness. *Surg Today* (in press)
 50. Clowes GHA Jr, O'Donnell TF, Blackburn GL, Maki TN: Energy metabolism and proteolysis in traumatized and septic man. *Surg Clin North Am* 1976; 56: 1169-1184
 51. Gump FE, Kinney JM: Energy balance and weight loss in burned patients. *Arch Surg* 1971; 103: 442-448
 52. Ryan NT: Metabolic adaptations for energy production during trauma and sepsis. *Surg Clin North Am* 1976; 56: 1073-1090
 53. Wilmore DW: Hormonal responses and their effect on metabolism. *Surg Clin North Am* 1976; 56: 999-1018
 54. Bessey PQ, Watters JM, Aoki TT, Wilmore DW: Combined hormonal infusion simulates the metabolic response to injury. *Ann Surg* 1984; 200: 264-281
 55. Burt ME, Aoki TT, Gorschboth CM, Brennan MF: Peripheral tissue metabolism in cancer-bearing man. *Ann Surg* 1983; 198: 685-691
 56. Sakurai Y, Zhang XU, Wolfe RR: Short-term effects of tumor necrosis factor on energy and substrate metabolism in dogs. *J Clin Invest* 1993; 91: 2437-2445
 57. Sakurai Y, Zhang X, Wolfe RR: Effect of tumor necrosis factor on substrate and amino acid kinetics in conscious dogs. *Am J Physiol* 1994; 266: E936-E945
 58. Stovroff MC, Fraker DL, Norton JA: Cachectin activity in the serum of cachectic, tumor-bearing rats. *Arch Surg* 1989; 124: 94-99
 59. Tracey KJ, Wei H, Manogue KR, Fong Y, Hesse DG, Nguyen HT, Kuo GC, Beutler B, Cotran RS, Cerami A, Lowry SF: Cachectin/tumor necrosis factor induces cachexia, anemia, and inflammation. *J Exp Med* 1988; 167: 1211-1227
 60. Hesse DG, Tracey KJ, Fong Y, Manogue KR, Palladino MA, Jr, Cerami A, Shires GT, Lowry SF: Cytokine appearance in human endotoxemia and primate bacteremia. *Surg Gynecol Obstet* 1988; 166: 147-153
 61. Tracey KJ, Lowry SF, Fahey TJ 3rd, Albert JD, Fong Y, Hesse D, Beutler B, Manogue KR, Calvano S, Wei H, Cerami A, Shires T: Cachectin/tumor necrosis factor induces lethal shock and stress hormone responses in the dog. *Surg Gynecol Obstet* 1987; 164: 415-422
 62. Van der Poll T, Romijn JA, Endert E, Borm JJ, Büller HR, Sauerwein HP: Tumor necrosis factor mimics the metabolic response to acute infection in healthy humans. *Am J Physiol* 1991; 261: E457-E465
 63. Bellomo R: The cytokine network in the critically ill. *Anaesth Intensive Care* 1992; 20: 288-302
 64. James JH, Hasselgren PO, Hummel RP 3rd, Warner BW, Fischer JE: Effect of sepsis on amino acid transport system A and its response to insulin in incubated rat skeletal muscle. *Metabolism* 1990; 39: 335-340
 65. Dudrick PS, Bland KI, Souba WW: Effects of tumor necrosis factor on system ASC-mediated glutamine transport by human fibroblasts. *J Surg Res* 1992; 52: 347-352
 66. Biolo G, Fleming RYD, Maggi SP, Wolfe RR: Transmembrane transport and intracellular kinetics of amino acids in human skeletal muscle. *Am J Physiol* 1995; 268: E75-E84
 67. Flakoll PJ, Kulaylat M, Frexes-Steed M, Hourani H, Brown LL, Hill JO, Abumrad NN: Amino acids augment insulin's suppression of whole body proteolysis. *Am J Physiol* 1989; 257: E839-E847
 68. Biolo G, Chinkes D, Zhang XJ, Wolfe RR: Harry M. Vars Research Award. A new model to determine *in vivo* the relationship between amino acid transmembrane transport and protein kinetics in muscle. *JPEN J Parenter Enteral Nutr* 1992; 16: 305-315
 69. Biolo G, Maggi SP, Williams BD, Tipton KD, Wolfe RR: Increased rates of muscle protein turnover and amino acid transport after resistance exercise in humans. *Am J Physiol* 1995; 268: E514-E520
 70. Biolo G, Maggi SP, Fleming RYD, Herndon DN, Wolfe RR: Relationship between transmembrane amino acid transport and protein kinetics in muscle tissue of severely burned patients. *Clin Nutr* 1993; 12(Suppl 2): 4
 71. Sakurai Y, Wolfe RR, Herndon DN, Funabiki T: Effects of long-term high-carbohydrate enteral feeding on transmembrane amino acid transport in severely burned patients. *Surg Forum* 1996; 47: 29-31
 72. Sakurai Y, Aarsland A, Herndon DN, Chinkes DL, Pierre E, Nguyen TT, Patterson BW, Wolfe RR: Stimulation of muscle protein synthesis by long-term insulin infusion in severely burned patients. *Ann Surg* 1995; 222: 283-297
 73. Jahoor F, Desai M, Herndon DN, Wolfe RR: Dynamics of the protein metabolic response to burn injury. *Metabolism* 1988; 37: 330-337
 74. Coates CL, Burwell RG, Carlin SA, Milligan GF, Littlejohn S, London PS, Selby C, Swannell AJ: The somatomedin activity in plasma from patients with multiple mechanical injuries: with observations on plasma cortisol. *Injury* 1981; 13: 100-107
 75. Ghahary A, Fu S, Shen YJ, Shankowsky HA, Tredget EE: Differential effects of thermal injury on circulating insulin-like growth factor binding proteins in burn patients. *Mol Cell Biochem* 1994; 135: 171-180
 76. Strock LL, Singh H, Abdullah A, Miller JA, Herndon DN: The effect of insulin-like growth factor I on postburn hypermetabolism. *Surgery* 1990; 108: 161-164
 77. Jeffries MK, Vance ML: Growth hormone and cortisol secretion in patients with burn injury. *J Burn Care Rehabil* 1992; 13: 391-395
 78. Cioffi WG, Gore DC, Rue LW 3rd, Carrougher G, Guler HP, McManus WF, Pruitt BA Jr: Insulin-like growth factor-1 lowers protein oxidation in patients with thermal injury. *Ann Surg* 1994; 220: 310-319
 79. Aribat T, Brazeau P, Davignon I, Garrel DR: Insulin-like growth factor-I blood levels in severely burned patients: effects of time post injury, age of patient and severity of burn. *Clin Endocrinol (Oxf)* 1993; 39: 583-589
 80. Dahn MS, Lange MP, Jacobs LA: Insulinlike growth factor 1 production is inhibited in human sepsis. *Arch Surg* 1988; 123: