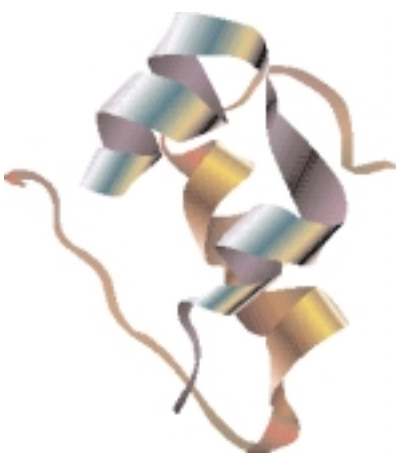


diabetes

A JOURNAL OF THE
AMERICAN DIABETES
ASSOCIATION®

www.diabetes.org/diabetes



PERSPECTIVES IN DIABETES

- Fuel selection in human skeletal muscle in insulin resistance: a reexamination
D.E. KELLEY AND L.J. MANDARINO 677

RAPID PUBLICATION

- Mice with gene disruption of both endothelial and neuronal nitric oxide synthase exhibit insulin resistance
R.R. SHANKAR, Y. WU, H. SHEN, J.-S. ZHU, AND A.D. BARON 684

METABOLISM AND SIGNAL TRANSDUCTION

- Secretion of tumor necrosis factor- α shows a strong relationship to insulin-stimulated glucose transport in human adipose tissue
P. LÖFGREN, V. VAN HARMELEN, S. REYNISDOTTIR, E. NÄSLUND, M. RYDÉN, S. RÖSSNER, AND P. ARNER 688
- Localization of glucokinase gene expression in the rat brain
R.M. LYNCH, L.S. TOMPKINS, H.L. BROOKS, A.A. DUNN-MEYNELL, AND B.E. LEVIN 693
- Effects of free fatty acid elevation on postabsorptive endogenous glucose production and gluconeogenesis in humans
M. RODEN, H. STINGL, V. CHANDRAMOULI, W.C. SCHUMANN, A. HOFER, B.R. LANDAU, P. NOWOTNY, W. WALDHÄUSL, AND G.I. SHULMAN 701

IMMUNOLOGY AND TRANSPLANTATION

- Acceleration of type 1 diabetes by a coxsackievirus infection requires a preexisting critical mass of autoreactive T-cells in pancreatic islets
D.V. SERREZE, E.W. OTTENDORFER, T.M. ELLIS, C.J. GAUNT, AND M.A. ATKINSON 708
- Cerulein, an inhibitor of protein acylation, selectively attenuates nutrient stimulation of insulin release: a study in rat pancreatic islets
H. YAJIMA, M. KOMATSU, S. YAMADA, S.G. STRAUB, T. KANEKO, Y. SATO, K. YAMAUCHI, K. HASHIZUME, G.W.G. SHARP, AND T. AIZAWA 712

ISLET STUDIES

- Glucose-regulated anaplerosis and cataplerosis in pancreatic β -cells: possible implication of a pyruvate/citrate shuttle in insulin secretion
S. FARFARI, V. SCHULZ, B. CORKEY, AND M. PRENTKI 718
- Cx36 preferentially connects β -cells within pancreatic islets
V. SERRE-BEINIER, S. LE GURUN, N. BELLUARDO, A. TROVATO-SALINARO, A. CHAROLLAIS, J.-A. HAEFLIGER, D.F. CONDORELLI, AND P. MEDA 727

Metformin restores insulin secretion altered by chronic exposure to free fatty acids or high glucose: a direct metformin effect on pancreatic β -cells

G. PATANÈ, S. PIRO, A.M. RABUAZZO, M. ANELLO, R. VIGNERI, AND F. PURRELLO 735

Insulinotropic glucagon-like peptide 1 agonists stimulate expression of homeodomain protein IDX-1 and increase islet size in mouse pancreas
D.A. STOFFERS, T.J. KIEFFER, M.A. HUSSAIN, D.J. DRUCKER, S. BONNER-WEIR, J.F. HABENER, AND J.M. EGAN 741

PATHOPHYSIOLOGY

Hepatic fat content and insulin action on free fatty acids and glucose metabolism rather than insulin absorption are associated with insulin requirements during insulin therapy in type 2 diabetic patients

L. RYYSY, A.-M. HÄKKINEN, T. GOTO, S. VEHKAVAARA, J. WESTERBACKA, J. HALAVAARA, AND H. YKI-JÄRVINEN 749

A new thiazolidinedione, NC-2100, which is a weak PPAR- γ activator, exhibits potent antidiabetic effects and induces uncoupling protein 1 in white adipose tissue of KKAY obese mice

Y. FUKUI, S. MASUI, S. OSADA, K. UMESONO, AND K. MOTOJIMA 759

Interaction between insulin sensitivity and muscle perfusion on glucose uptake in human skeletal muscle: evidence for capillary recruitment

A.D. BARON, M. TARSHOBY, G. HOOK, E.N. LAZARIDIS, J. CRONIN, A. JOHNSON, AND H.O. STEINBERG 768

Targeted upregulation of pyruvate dehydrogenase kinase (PDK)-4 in slow-twitch skeletal muscle underlies the stable modification of the regulatory characteristics of PDK induced by high-fat feeding

M.J. HOLNESS, A. KRAUS, R.A. HARRIS, AND M.C. SUGDEN 775

Response of pancreatic β -cells to improved insulin sensitivity in women at high risk for type 2 diabetes

T.A. BUCHANAN, A.H. XIANG, R.K. PETERS, S.L. KJOS, K. BERKOWITZ, A. MARROQUIN, J. GOICO, C. OCHOA, AND S.P. AZEN 782

IGF-I treatment in adults with type 1 diabetes: effects on glucose and protein metabolism in the fasting state and during a hyperinsulinemic-euglycemic amino acid clamp

P.V. CARROLL, E.R. CHRIST, A.M. UMPLEBY, I. GOWRIE, N. JACKSON, S.B. BOWES, R. HOVORKA, P. CROOS, P.H. SÖNKSEN, AND D.L. RUSSELL-JONES 789

Rates of skeletal muscle and adipose tissue glycerol release in nonobese and obese subjects

J. BOLINDER, D.A.J.M. KERCKHOFFS, E. MOBERG, E. HAGSTRÖM-TOFT, AND P. ARNER 797



DIAEAZ 49(5) 677-882 (2000)
ISSN 0012-1797

Table of contents continues on page iii. ➤

Delayed insulin transport across endothelium in insulin-resistant JCR:LA-cp rats T.C. WASCHER, G. WÖLKART, J.C. RUSSELL, AND F. BRUNNER	803
Tumor necrosis factor- α induces hepatic insulin resistance in obese Zucker (<i>fa/fa</i>) rats via interaction of leukocyte antigen-related tyrosine phosphatase with focal adhesion kinase A.T. CHEUNG, J. WANG, D. REE, J.K. KOLLS, AND M. BRYER-ASH	810
Presumed apoptosis and reduced arcuate nucleus neuropeptide Y and pro-opiomelanocortin mRNA in non-coma hypoglycemia N.C. TKACS, A.A. DUNN-MEYNELL, AND B.E. LEVIN	820
Mechanism of troglitazone action in type 2 diabetes K. FALK PETERSEN, M. KRSSAK, S. INZUCCHI, G.W. CLINE, S. DUFOUR, AND G.I. SHULMAN	827
Genotype/phenotype relationships in HNF-4 α /MODY1: haploinsufficiency is associated with reduced apolipoprotein(AII), apolipoprotein(CIII), lipoprotein(a), and triglyceride levels D.Q. SHIH, H.M. DANSKY, M. FLEISHER, G. ASSMANN, S.S. FAJANS, AND M. STOFFEL	832
Differential brain responses to satiation in obese and lean men J.-F. GAUTIER, K. CHEN, A.D. SALBE, D. BANDY, R.E. PRATLEY, M. HEIMAN, E. RAVUSSIN, E.M. REIMAN, AND P.A. TATARANNI	838
Divergent regulation of Akt1 and Akt2 isoforms in insulin target tissues of obese Zucker rats Y.-B. KIM, O.D. PERONI, T.F. FRANKE, AND B.B. KAHN	847

COMPLICATIONS

Nitric oxide synthesis and isoprostane production in subjects with type 1 diabetes and normal urinary albumin excretion S. O'BYRNE, P. FORTE, L.J. ROBERTS II, J.D. MORROW, A. JOHNSTON, E. ÅNGGÅRD, R.D.G. LESLIE, AND N. BENJAMIN	857
Glucosamine activates the plasminogen activator inhibitor 1 gene promoter through Sp1 DNA binding sites in glomerular mesangial cells H.J. GOLDBERG, J. SCHOLEY, AND I.G. FANTUS	863

BRIEF GENETICS REPORTS

The CART gene and human obesity: mutational analysis and population genetics B.G. CHALLIS, G.S.H. YEO, I.S. FAROOQI, J. LUAN, S. AMINIAN, D.J. HALSALL, J.M. KEOGH, N.J. WAREHAM, AND S. O'RAHILLY	872
<i>NeuroD/BETA2</i> gene variability and diabetes: no associations to late-onset type 2 diabetes but an A45 allele may represent a susceptibility marker for type 1 diabetes among Danes L. HANSEN, J.N. JENSEN, S. URIOSTE, H.V. PETERSEN, F. POCIOT, H. EIBERG, O.P. KRISTIANSEN, T. HANSEN, P. SERUP, J. NERUP, O. PEDERSEN, THE DANISH STUDY GROUP OF DIABETES IN CHILDHOOD, AND THE DANISH IDDM EPIDEMIOLOGY AND GENETICS GROUP	876

ORGANIZATION SECTION

SI UNITS TABLE

MAY AUTHOR INDEX (Volume 49, Number 5)

- Aizawa, T., 712
Aminian, S., 872
Anello, M., 735
Änggård, E., 857
Arner, P., 688, 797
Assmann, G., 832
Atkinson, M.A., 708
Azen, S.P., 782

Bandy, D., 838
Baron, A.D., 684, 768
Belluardo, N., 727
Benjamin, N., 857
Berkowitz, K., 782
Bolinder, J., 797
Bonner-Weir, S., 741
Bowes, S.B., 789
Brooks, H.L., 693
Brunner, F., 803
Bryer-Ash, M., 810
Buchanan, T.A., 782

Carroll, P.V., 789
Challis, B.G., 872
Chandramouli, V., 701
Charollais, A., 727
Chen, K., 838
Cheung, A.T., 810
Christ, E.R., 789
Cline, G.W., 827
Condorelli, D.F., 727
Corkey, B., 718
Cronin, J., 768
Croos, P., 789

Danish IDDM
Epidemiology and
Genetics Group, 876
Danish Study Group
of Diabetes
in Childhood, 876
Dansky, H.M., 832
- Drucker, D.J., 741
Dufour, S., 827
Dunn-Meynell, A.A.,
693, 820

Egan, J.M., 741
Eiberg, H., 876
Ellis, T.M., 708

Fajans, S.S., 832
Falk Petersen, K., 827
Fantus, I.G., 863
Farfari, S., 718
Farooqi, I.S., 872
Fleisher, M., 832
Forte, P., 857
Franke, T.F., 847
Fukui, Y., 759

Gauntt, C.J., 708
Gautier, J.-F., 838
Goico, J., 782
Goldberg, H.J., 863
Goto, T., 749
Gowrie, I., 789

Habener, J.F., 741
Haefliger, J.-A., 727
Hagström-Toft, E., 797
Häkkinen, A.-M., 749
Halavaara, J., 749
Halsall, D.J., 872
Hansen, L., 876
Hansen, T., 876
Harris, R.A., 775
Hashizume, K., 712
Heiman, M., 838
Hofer, A., 701
Holness, M.J., 775
Hook, G., 768
Hovorka, R., 789
Hussain, M.A., 741
- Inzucchi, S., 827

Jackson, N., 789
Jensen, J.N., 876
Johnson, A., 768
Johnston, A., 857

Kahn, B.B., 847
Kaneko, T., 712
Kelley, D.E., 677
Keogh, J.M., 872
Kerckhoffs, D.A.J.M.,
797
Kieffer, T.J., 741
Kim, Y.-B., 847
Kjos, S.L., 782
Kolls, J.K., 810
Komatsu, M., 712
Kraus, A., 775
Kristiansen, O.P., 876
Krssak, M., 827

Landau, B.R., 701
Lazaridis, E.N., 768
Le Gurun, S., 727
Leslie, R.D.G., 857
Levin, B.E., 693, 820
Löfgren, P., 688
Luan, J., 872
Lynch, R.M., 693

Mandarino, L.J., 677
Marroquin, A., 782
Masui, S., 759
Meda, P., 727
Moberg, E., 797
Morrow, J.D., 857
Motojima, K., 759

Näslund, E., 688
Nerup, J., 876
Nowotny, P., 701
- O'Byrne, S., 857
O'Rahilly, S., 872
Ochoa, C., 782
Osada, S., 759
Ottendorfer, E.W., 708

Patanè, G., 735
Pedersen, O., 876
Peroni, O.D., 847
Peters, R.K., 782
Petersen, H.V., 876
Piro, S., 735
Pociot, F., 876
Pratley, R.E., 838
Prentki, M., 718
Purrello, F., 735

Rabuzzo, A.M., 735
Ravussin, E., 838
Ree, D., 810
Reiman, E.M., 838
Reynisdottir, S., 688
Roberts II, L.J., 857
Roden, M., 701
Rössner, S., 688
Russell, J.C., 803
Russell-Jones, D.L., 789
Rydén, M., 688
Ryysy, L., 749

Salbe, A.D., 838
Sato, Y., 712
Scholey, J., 863
Schulz, V., 718
Schumann, W.C., 701
Serre-Beinier, V., 727
Serreze, D.V., 708
Serup, P., 876
Shankar, R.R., 684
Sharp, G.W.G., 712
Shen, H., 684
- Shih, D.Q., 832
Shulman, G.I., 827, 701
Sönksen, P.H., 789
Steinberg, H.O., 768
Stingl, H., 701
Stoffel, M., 832
Stoffers, D.A., 741
Straub, S.G., 712
Sugden, M.C., 775

Tarshoby, M., 768
Tataranni, P.A., 838
Tkacs, N.C., 820
Tompkins, L.S., 693
Trovato-Salinaro, A., 727

Umesono, K., 759
Umpleby, A.M., 789
Urioste, S., 876

van Harmelen, V., 688
Vehkavaara, S., 749
Vigneri, R., 735

Waldhäusl, W., 701
Wang, J., 810
Wareham, N.J., 872
Wascher, T.C., 803
Westerbacka, J., 749
Wölkart, G., 803
Wu, Y., 684

Xiang, A.H., 782

Yajima, H., 712
Yamada, S., 712
Yamauchi, K., 712
Yeo, G.S.H., 872
Yki-Järvinen, H., 749

Zhu, J.-S., 684