

Clinical trials of intensive glyceimic control

TrialResults-center www.trialresultscenter.org

1 diabetes type 2

Trial	Treatments	Patients	Trials design and methods
intensive glyceimic control vs conventional treatment			
ACCORD , 2008 [NCT00000620] n=5128/5123 follow-up: 3.5y (5y)	very intensive glyceimic control through currently available means (targeting a glycosylated hemoglobin <6%) during a mean of 3.7 years versus standard glyceimic control (targeting a glycosylated hemoglobin 7.0-7.9%)	patients with type 2 diabetes mellitus at high risk of death and stroke (pre-existing heart disease or two or more additional risk factors for heart disease)	Factorial plan open USA, Canada
ADDITION , 2010 [NCT00237549] n=1678/1379 follow-up: 5 year	intensive multifactorial treatment versus routine care	patients with newly diagnosed type 2 diabetes	Parallel groups open Denmark, United Kingdom, the Netherlands
ADVANCE , 2008 [NCT00145925] n=5571/5569 follow-up: median 5 y	intensive glucose-lowering treatments HbA1C <=6.5% using gliclazide(modified release) plus other drugs versus standard glucose-lowering treatments (targetglycated hemoglobin levels defined on the basisof local guidelines)	patients with type 2 diabetes	Parallel groups open 20 countries
Kumamoto (primary prev) , 1995 n=28/27 follow-up: 8.0y	intensive glyceimic control with multiple insulin injection treatment versus conventional insulin injection treatment (1-2 daily injections)	patients with non-insulin-dependent diabetes mellitus and with no retinopathy and urinary albumin excretions <30 mg/24 h	Parallel groups open Japan
Kumamoto (secondary prev) , 1995 n=27/28 follow-up: 8.0y	multiple insulin injection treatment versus conventional insulin injection treatment (1-2 daily injections)	patients with non-insulin-dependent diabetes mellitus and simple retinopathy	Parallel groups open Japan

continued...

Trial	Treatments	Patients	Trials design and methods
Steno 2 , 2003 n=80/80 follow-up: 7.8 y	targeted, intensified, multifactorial intervention versus conventional treatment on modifiable risk factors for cardiovascular disease	patients with type 2 diabetes and microalbuminuria	Parallel groups open Denmark
UKPDS 33 , 1998 n=2729/1138 follow-up: 10.3 y	intensive policy with a sulphonylurea (chlorpropamide, glibenclamide, or glipizide) or with insulin; fasting plasma glucose <6.0 mmol/L versus conventional policy with diet	newly diagnosed patients with type 2 diabetes who after 3 months diet treatment had a mean of two fasting plasma glucose concentrations of 61150 mmol/L	Parallel groups open UK
VA CSDM , 1997 n=75/78 follow-up: 2.3y	intensive glycemic control (stepped plan from 1 evening injection of insulin, alone or with glipizide, to multiple daily injections, target to attain near-normal glycemia levels) versus standard treatment (1 insulin injection every morning)	non-insulin-dependent diabetes mellitus patients	Parallel groups open USA
VADT , 2008 [NCT00032487] n=892/899 follow-up: 5.6y	intensive glucose control versus standard glucose control	military veterans who had a suboptimal response to therapy for type 2 diabetes	Parallel groups open US

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More details and results :

- intensive glycemic control for diabetes type 2 in Type 1 and 2 diabetes at <http://www.trialresultscenter.org/go-Q240>
- intensive glycemic control for diabetes type 2 in type 2 diabetes (NIDD) at <http://www.trialresultscenter.org/go-Q267>
- intensive therapy for diabetes type 2 in all type of patients at <http://www.trialresultscenter.org/go-Q459>

References

ACCORD, 2008:

Gerstein HC, Miller ME, Byington RP, Goff DC Jr, Bigger JT, Buse JB, Cushman WC, Genuth S, Ismail-Beigi F, Grimm RH Jr, Probstfield JL, Simons-Morton DG, Friedewald WT Effects of intensive glucose lowering in type 2 diabetes. N Engl J Med 2008;358:2545-59 [18539917]

Goff DC Jr, Gerstein HC, Ginsberg HN, Cushman WC, Margolis KL, Byington RP, Buse JB, Genuth S, Probstfield JL, Simons-Morton DG Prevention of cardiovascular disease in persons with type 2 diabetes mellitus: current knowledge and rationale for the Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial. Am J Cardiol 2007;99:4i-20i [17599424]

Effects of Medical Therapies on Retinopathy Progression in Type 2 Diabetes. N Engl J Med 2010 Jun 29;: [20587587] 10.1056/NEJMoa1001288

Ismail-Beigi F, Craven T, Banerji MA, Basile J, Calles J, Cohen RM, Cuddihy R, Cushman WC, Genuth S, Grimm RH Jr, Hamilton BP, Hoogwerf B, Karl D, Katz L, Krikorian A, O'Connor P, Pop-Busui R, Schubart U, Simmons D, Taylor H, Thomas A, Weiss D, Hramiak I Effect of intensive treatment of hyperglycaemia on microvascular outcomes in type 2 diabetes: an analysis of the ACCORD randomised trial. *Lancet* 2010 Jun 29;: [20594588] [10.1016/S0140-6736\(10\)60576-4](https://doi.org/10.1016/S0140-6736(10)60576-4)

Klein BE Reduction in Risk of Progression of Diabetic Retinopathy. *N Engl J Med* 2010 Jun 29;: [20587586] [10.1056/NEJMe1005667](https://doi.org/10.1056/NEJMe1005667)

Gerstein HC, Miller ME, Genuth S, Ismail-Beigi F, Buse JB, Goff DC Jr, Probstfield JL, Cushman WC, Ginsberg HN, Bigger JT, Grimm RH Jr, Byington RP, Rosenberg YD, Friedewald WT Long-term effects of intensive glucose lowering on cardiovascular outcomes. *N Engl J Med* 2011 Mar 3;364:818-28 [21366473] [10.1056/NEJMoa1006524](https://doi.org/10.1056/NEJMoa1006524)

ADDITION, 2010:

Sandbaek A, Griffin SJ, Rutten G, Davies M, Stolk R, Khunti K, Borch-Johnsen K, Wareham NJ, Lauritzen T Stepwise screening for diabetes identifies people with high but modifiable coronary heart disease risk. The ADDITION study. *Diabetologia* 2008;51:1127-34 [18443762] [10.1007/s00125-008-1013-0](https://doi.org/10.1007/s00125-008-1013-0)

Griffin SJ, Borch-Johnsen K, Davies MJ, Khunti K, Rutten GE, Sandbk A, Sharp SJ, Simmons RK, van den Donk M, Wareham NJ, Lauritzen T Effect of early intensive multifactorial therapy on 5-year cardiovascular outcomes in individuals with type 2 diabetes detected by screening (ADDITION-Europe): a cluster-randomised trial. *Lancet* 2011 Jun 24;: [21705063] [10.1016/S0140-6736\(11\)60698-3](https://doi.org/10.1016/S0140-6736(11)60698-3)

ADVANCE, 2008:

Patel A, MacMahon S, Chalmers J, Neal B, Billot L, Woodward M, Marre M, Cooper M, Glasziou P, Grobbee D, Hamet P, Harrap S, Heller S, Liu L, Mancia G, Mogensen CE, Pan C, Poulter N, Rodgers A, Williams B, Bompont S, de Galan BE, Joshi R, Travert F Intensive blood glucose control and vascular outcomes in patients with type 2 diabetes. *N Engl J Med* 2008;358:2560-72 [18539916]

Kumamoto (primary prev), 1995:

Ohkubo Y, Kishikawa H, Araki E, Miyata T, Isami S, Motoyoshi S, Kojima Y, Furuyoshi N, Shichiri M Intensive insulin therapy prevents the progression of diabetic microvascular complications in Japanese patients with non-insulin-dependent diabetes mellitus: a randomized prospective 6-year study. *Diabetes Res Clin Pract* 1995;28:103-17 [7587918]

Kumamoto (secondary prev), 1995:

Shichiri M, Kishikawa H, Ohkubo Y, Wake N Long-term results of the Kumamoto Study on optimal diabetes control in type 2 diabetic patients. *Diabetes Care* 2000;23 Suppl 2:B21-9 [10860187]

Ohkubo Y, Kishikawa H, Araki E, Miyata T, Isami S, Motoyoshi S, Kojima Y, Furuyoshi N, Shichiri M Intensive insulin therapy prevents the progression of diabetic microvascular complications in Japanese patients with non-insulin-dependent diabetes mellitus: a randomized prospective 6-year study. *Diabetes Res Clin Pract* 1995;28:103-17 [7587918]

Steno 2, 2003:

Gaede P, Vedel P, Larsen N, Jensen GV, Parving HH, Pedersen O Multifactorial intervention and cardiovascular disease in patients with type 2 diabetes. *N Engl J Med* 2003;348:383-93 [12556541]

UKPDS 33, 1998:

Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). UK Prospective Diabetes Study (UKPDS) Group. *Lancet* 1998;352:837-53 [9742976]

VA CSDM, 1997:

Abaira C, Colwell J, Nuttall F, Sawin CT, Henderson W, Comstock JP, Emanuele NV, Levin SR, Pacold I, Lee HS Cardiovascular events and correlates in the Veterans Affairs Diabetes Feasibility Trial. Veterans Affairs Cooperative Study on Glycemic Control and Complications in Type II Diabetes. *Arch Intern Med*

1997;157:181-8 [9009975]

VADT, 2008:

Duckworth W, Abraira C, Moritz T, Reda D, Emanuele N, Reaven PD, Zieve FJ, Marks J, Davis SN, Hayward R, Warren SR, Goldman S, McCarren M, Vitek ME, Henderson WG, Huang GD Glucose Control and Vascular Complications in Veterans with Type 2 Diabetes. N Engl J Med 2008 Dec 17;: [19092145]