

TRIGR PUBLICATIONS

2001 (4)

Åkerblom HK: A hypothesis: cow's milk and type 1 diabetes. *Pediatr Rev* 2001;1:2-5.

Danne T, v.Schütz W, Deiss D, Kordonouri O: Präventive Maßnahmen gegen Diabetes mellitus typ 1? Was ist gesichert, wie ist die derzeitige Studienlage? *Kinder - und Jugendarzt* 2001;32:649-653.

Hämäläinen A-M, Savola K, Kulmala PK, Koskela P, Åkerblom HK, Knip M, the Finnish TRIGR Study Group: Disease-associated autoantibodies during pregnancy and at birth in families affected by type 1 diabetes. *Clin Exp Immunol* 2001;126:230-235. PMID:11703365

Ronkainen MS, Hämäläinen A-M, Koskela P, Åkerblom HK, Knip M, the Finnish TRIGR Study Group: Pregnancy induces nonimmunoglobulin insulin-binding activity in both maternal and cord blood serum. *Clin Exp Immunol* 2001;124:190-196. PMID:11422194

2002 (3)

Åkerblom HK, Vaarala O, Hyöty H, Ilonen J, Knip M: Environmental factors in the etiology of type 1 diabetes. *Am J Med Genet* 2002;115:18-29. PMID:12116173

Dosch H-M, Becker DJ. Infant feeding and autoimmune diabetes. In "Integrating Population Outcomes, Biological Mechanisms and Research Methods in the Study of Human Milk and Lactation", Ed. Davis et al., Kluwer Academic/Plenum Publishers 2002;133-140.

Ilonen J, Sjöroos M, Knip M, Veijola R, Simell O, Åkerblom HK, Paschou P, Bozas E, Havarani B, Malamitsi-Puchner A, Thymelli J, Vazeou A, Bartsocas CS: Estimation of genetic risk for type 1 diabetes. *Am J Med Genet* 2002;115: 30-36. PMID:12116174

2003 (9)

Åkerblom HK, Becker D, Dosch H-M, Dupré J, Ilonen J, Knip M, Krischer JP, Palmer JP, Savilahti E, Vaarala O, Virtanen S. Nutritional trial for primary prevention of Type 1 diabetes in children (TRIGR). *Diabetes Metab* 2003;29:1460 (abstract).

Knip M: Cow's milk and the new trials for prevention of type 1 diabetes. *J Endocrinol Invest* 2003; 26:265-267. PMID:12809179

Knip M: Environmental triggers and determinants of beta-cell autoimmunity and Type 1 diabetes. *Rev Endocr Metab Disord* 2003;4:213-223. PMID:14501172

Knip M: Cow's milk antibodies in patients with newly diagnosed type 1 diabetes: Primary or secondary? *Pediatr Diabetes* 2003;4:155-156. PMID:14710774

*Nallamshetty L, Eschrich S, Cuthbertson D, Malloy J, Goldgof DB, Alexander A, Trucco M, Ilonen J, Åkerblom HK, Krischer JP and the TRIGR Study Group: An Expert System For Evaluating Risk In Type-1 Diabetes. In *IEEE International Conference on Systems, Man and Cybernetics* 2003:1660-1665.

*Nucci A, Van Horn K, Becker D, Virtanen SM, Åkerblom HK and the TRIGR Study Group: Prevention of Type 1 diabetes in children through nutrition intervention: The trial to reduce insulin dependent diabetes in the genetically at risk. *J Am Diet Ass* 2003; 103, Suppl. 1:A42 (abstract).

Pozzilli P, Manfrini S, Picardi A: Cow's milk and trials for prevention of Type 1 diabetes. *Diabetic Med* 2003;20:871-872. PMID:14632711

Sadeharju K, Hämäläinen A-M, Knip M, Lönnrot M, Koskela P, Virtanen SM, Ilonen J, Åkerblom HK, Hyöty H, the Finnish TRIGR Study Group: Enterovirus infections as a risk factor for type I diabetes: virus analyses in a dietary intervention trial. *Clin Exp Immunol* 2003;132:271-277. PMID:12699416

Virtanen SM, Knip M: Nutritional risk predictors of b cell autoimmunity and type 1 diabetes at a young age. *Am J Clin Nutr* 2003;78:1053-1067. PMID:14668264

2004 (7)

Åkerblom H, Virtanen SM, Savilahti E, Ilonen J, Vaarala O, Knip M: Breast feeding and the risk of type 1 diabetes. 12th International Conference of the International Society for Research in Human Milk and Lactation. Cambridge 10th – 14th September 2004. P.28 (abstract).

Aschemeier B, Bittner C, Lüpke K, Kordonouri O, Danne T: Optimal design for the recruitment of participants as a factor for the effective implementation of a clinical trial. *J Pediatr Gastroenterol Nutr* 2004;39, Suppl. 1:S525 (abstract).

Bärlund S, Uusitalo U, Kleemola P, Knip M, Åkerblom HK, Virtanen SM: Dietary compliance in diabetes prevention project in Finland. *J Pediatr Gastroenterol Nutr* 2004;39, Suppl. 1:S523 (abstract).

Gorska A: Problems related to recruitment of participants for the TRIGR project. *J Pediatr Gastroenterol Nutr* 2004;39, Suppl. 1:S543 (abstract).

Koski MJ, Krischer JP: Monitoring and supervising a dietary intervention trial using modern data processing system. *J Pediatr Gastroenterol Nutr* 2004;39, Suppl. 1:S539 (abstract).

Mendlova P: TRIGR study in Czech Republic – recruitment rate impacts of management. *J Pediatr Gastroenterol Nutr* 2004;39, Suppl. 1:S544 (abstract).

Vaarala O: Environmental causes: dietary causes. *Endocrinol Metab Clin N Am* 2004;33:17-26. PMID:15053892

2005 (14)

Åkerblom HK: Early programming of diabetes risk –an introduction . *Adv Exp Med Biol* 2005;569:139-141. PMID: 16137118

Åkerblom HK, Virtanen SM, Ilonen J, Savilahti E, Vaarala O, Reunanen A, Teramo K, Hämäläinen A-M, Paronen J, Riijkjärvi M-A, Ormiston A, Ludvigsson J, Dosch H-M, Hakulinen T, Knip M, National TRIGR Study Groups: Dietary manipulation of beta cell autoimmunity in infants at increased risk of type 1 diabetes: a pilot study. *Diabetologia* 2005;48:829-837. PMID:15838685

Åkerblom HK, Virtanen SM, Ilonen J, Savilahti E, Vaarala O, Reunanen A, Teramo K, Hämäläinen AM, Paronen J, Dosch HM, Hakulinen T, Knip M, the Finnish TRIGR Study Group. Weaning to a hydrolyzed formula in infancy decreases the cumulative incidence of beta-cell autoimmunity in young high-risk children. *Endocr.J.* 2005;52:Suppl. 129 (abstract).

Bärlund S, Vähätalo L, Uusitalo U, Nucci AM, Berseth C, Frazer T, Hansen JW, Koski K, Ormiston A, Rogers LM, Savilahti E, Becker D, Dupré J, Krischer JP, Knip M, Åkerblom HK, Virtanen SM (TRIGR Nutritional Intervention Committee, *the TRIGR Study Group): Dietary patterns among infants in a dietary intervention trial for primary prevention of type 1 diabetes. *Pediatr Diabetes* 2005;6, Suppl. 3:10 (abstract). PMID: 16109065

Erkkola M, Kronberg-Kippilä C, Savilahti E, Kenward MG, Salonen M, Ilonen J, Knip M, Åkerblom HK, Virtanen SM: Maternal consumption of dairy products during pregnancy and lactation, and the development of cow's milk antibodies in the offspring. *Acta Paediatr* 2005;94:696-704. PMID:16188771

Khazrai YM. Studio di prevenzione primaria del diabete tipo 1 alla nascita con dieta priva di proteine del latte vaccino (Primary prevention study of type 1 diabetes mellitus with a cow-milk protein-free diet in infancy, in Italian). *ANDID Notizie Rivista dell'Associazione Nazionale Dietisti.* 2005;4:25-26

Knip M, Åkerblom HK. Early nutrition and later diabetes risk. *Adv Exp Med Biol* 2005;569:142-150. PMID:16137119

*Knip M, de Beaufort C, Bruining GJ, Castano L, Danne T, Ludvigsson J, Madacsy L, Ormiston A, Pozzilli P, Schoenle E, Serrano-Rios M, Songini M, Vavrinec J, Wasikowa RB, Virtanen SM, Cuthbertson D, Åkerblom HK, *the TRIGR Study Group: Birth size and postnatal growth in young offspring in European families with at least one family member affected by type 1 diabetes. *Pediatr Diabetes* 2005;6, Suppl. 3:19 (abstract). PMID:16109065

Knip M, Veijola R, Virtanen SM, Hyöty H, Vaarala O, Åkerblom HK: Environmental triggers and determinants of type 1 diabetes. *Diabetes* 2005;54, Suppl. 2:S125-S136.

Rogers LM, Jovanovic L, Becker DJ. Should she or shouldn't she? The relationship between infant feeding practices and type 1 diabetes in the genetically at risk. *Diabetes Care* 2005;28:2809. PMID:16249566

Sadeharju K, Knip M, Virtanen SM, Savilahti E, Tauriainen S, Koskela P, Åkerblom HK, Hyöty H, the Finnish TRIGR Study Group. Maternal enterovirus antibodies in

breast milk protect the child from enterovirus infections – results from the TRIGR (Pilot 2) trial. *Endocr.J.* 2005;52:Suppl. 122 (abstract).

Tiittanen M, Paronen J, Savilahti E, Virtanen SM, Ilonen J, Knip M, Åkerblom HK, Vaarala O, the Finnish TRIGR Study Group. Dietary insulin as an immunogen and tolerogen. *Endocr.J.* 2005;52:Suppl. 79 (abstract).

*The TRIGR Study Group: Monitoring experiences from a nutritional diabetes prevention study. *Pediatr Diabetes* 2005;6, Suppl. 3:31 (abstract). PMID:16109065

Wasikowa RB, Dziatkowiak H, Jarosz-Chobot P, Gorska A, Basiak A, Iwankiewicz J, Deja G, Minkina-Pedras M, Muchacke-Bianca M, Kalina M, Cypryk K, Szadkowska A, the Polish TRIGR Study Group: Initial recruitment experiences in Poland in a nutritional intervention study for primary prevention of type 1 diabetes. *Pediatr Diabetes* 2005;6, Suppl. 3:31-32 (abstract). PMID:16109065

2006 (7)

Åkerblom HK, Virtanen SM, Ilonen J, Savilahti E, Vaarala O, Reunanen A, Teramo K, Hämäläinen A-M, Paronen J, Dosch H-M, Hakulinen T, Knip M. Weaning to a highly hydrolyzed formula in infancy decreases the cumulative incidence of beta-cell autoimmunity in young children with increased genetic risk for type 1 diabetes. *Pediatr Diabetes* 2006;7, Suppl. 5:58-59 (abstract).

*Bärlund S, Cuthbertson D, Nucci AM, Krischer JP, Knip M, Åkerblom HK, Virtanen SM, *the TRIGR Study Group: Breastfeeding Among Mothers with Type 1 Diabetes (T1D) in a Primary Diabetes Prevention Trial. *Diabetologia* 2006;49, Suppl. 1:170-171.

Luopajarvi K, Honkanen J, Ilonen J, Åkerblom HK, O Vaarala on behalf of the TRIGR Study Group. Reduced expression of regulatory T-cell associated transcription factor FoxP3 in cord blood T lymphocytes from newborn infants at genetic risk of type 1 diabetes. *Diabetologia* 2006;49, Suppl. 1:13-14 (abstract).

*Rogers LM, Nucci AM, Cuthbertson D, Becker DJ, Knip M, Virtanen SM, Hans K Åkerblom, the TRIGR Study Group: Growth differences between North American and European children at risk for type 1 diabetes (T1D). *Diabetes* 2006;55, Suppl. 1:A225 (abstract).

Tiittanen M, Paronen J, Savilahti E, Virtanen SM, Ilonen J, Knip M, Åkerblom HK, Vaarala O, the Finnish TRIGR Study Group. Dietary insulin as an immunogen and tolerogen. *Pediatr Allergy Immunol* 2006;17:538-543. PMID:17014631

Vähätalo L, Bärlund S, Hannila M-L, Uusitalo U, Pigg HM, Salonen M, Nucci A, Krischer JP, Knip M, Åkerblom HK, Virtanen SM. Relative validity of a dietary interview for assessing infant diet and compliance in a dietary intervention trial. *Matern Child Nutr* 2006;2:181-187. PMID:16881930

*Khazrai YM, Cacciapaglia F, Beretta G, Altomare M, Cherubini V, Suraci C, Pozzilli P, *the TRIGR Study Group. Pregnancy and offspring outcomes in families with one parent affected by type 1 diabetes. *Diabetes* 2006;55, Suppl. 1:A607 (abstract).

2007 (5)

*Åkerblom HK, Knip M, Becker D, Dosch H-M, Dupré J, Ilonen J, Krischer JP and *the TRIGR Study Group. The TRIGR Trial: Testing the potential link between weaning diet and type 1 diabetes. *Immun Endocr Metab Agents in Med Chem* 2007;7:251-263.

*The TRIGR Study Group. Study design of the Trial to Reduce IDDM in the Genetically at Risk (TRIGR). *Pediatr Diabetes* 2007;8:117-137. PMID:17550422

Luopajarvi K, Skarsvik S, Ilonen J, Åkerblom HK, Vaarala O. Reduced CCR4, IL-13 and GATA-3 up-regulation in response to type 2 cytokines of cord blood T lymphocytes in infants at genetic risk of type 1 diabetes. *Immunology* 2007;121:189-196. PMID:17244154, PMCID:PMC2265934

Luopajarvi K, Savilahti E, Virtanen SM, Ilonen J, Knip M, Åkerblom HK, Vaarala O. Enhanced levels of cow's milk antibodies in infancy in children who develop type 1 diabetes later in life. *IDS November 14-18, 2007, Miami, Florida (abstract)*.

Sadeharju K, Knip M, Virtanen SM, Savilahti E, Tauriainen S, Koskela P, Åkerblom HK, Hyöty H and the Finnish TRIGR Study Group. Maternal Antibodies in Breast Milk Protect the Child From Enterovirus Infections. *Pediatrics* 2007;119: 941 -946. PMID:17473095

2008 (1)

Luopajarvi K, Savilahti E, Virtanen SM, Ilonen J, Knip M, Åkerblom HK, Vaarala O. Enhanced levels of cow's milk antibodies in infancy in children who develop type 1 diabetes later in childhood. *Pediatr Diabetes* 2008;9:434-441. PMID:18503496, PMCID: PMC4225539

2009 (1)

Ilonen J, Vaarala O, Åkerblom HK, Knip M. Environmental factors and primary prevention in type 1 diabetes. *Pediatric Endocrinology, Diabetes and Metabolism* 2009;15;4: 227-232. PMID:20455416, PMCID: PMC4225540

2010 (3)

Knip M, Virtanen SM, Åkerblom HK. Infant feeding and the risk of type 1 diabetes. *Am J Clin Nutr* 2010;91(suppl):1506S-13S. PMID: 20335552 NIHMS ID: NIHMS638158

* Sorkio S, Cuthbertson D, Bärlund S, Reunanen A, Nucci AM, Berseth CL, Koski K, Ormiston A, Savilahti E, Uusitalo U, Ludvigsson J, Becker DJ, Dupre J, Krischer JP, Knip M, Åkerblom HK, Virtanen SM, *TRIGR Study Group. Breastfeeding patterns of mothers with type 1 diabetes: results from an infant feeding trial. *Diabetes Metab Res Rev* 2010;26: 206-211. PMID:20474068, PMCID: PMC4225619

Knip M, Virtanen SM, Seppä K, Ilonen J, Savilahti E, Vaarala O, Reunanen A, Teramo K, Hämäläinen AM, Paronen J, Dosch HM, Hakulinen T, Åkerblom HK, the Finnish TRIGR Study Group: Dietary intervention in infancy and later signs of beta-cell autoimmunity. *N Engl J Med* 2010; 363: 1900-1908. PMID:21067382, PMCID:PMC4242902

2011 (4)

*The TRIGR Study Group. The Trial to Reduce IDDM in the Genetically at Risk (TRIGR) study: recruitment, intervention and follow-up. *Diabetologia* 2011; 54:627-633. PMID: 21153533, PMCID:PMC3034039

*The TRIGR Study Group. Erratum to: The Trial to Reduce IDDM in the Genetically at Risk (TRIGR) study: Recruitment, intervention and follow-up. *Diabetologia* 2011; 54: 2210. PMID:21153533, PMCID:PMC3034039

Knip M, Virtanen SM, Åkerblom HK. Dietary intervention in infancy and later signs of beta-cell autoimmunity. Response to Vuillermin P and Allen K and Kim J and Chae YK. *N Engl J Med* 2011; 364: 880. PMID:21067382, PMCID:PMC4242902

Virtanen S, Bärlund S, Salonen M, Savilahti E, Reunanen A, Paronen J, Hämäläinen AM, Ilonen J, Teramo K, Erkkola M, Ormiston A, Einberg U, Riikjärv MA, Ludvigsson J, Knip M, Åkerblom H; ** The Finnish TRIGR Study Group. Feasibility and compliance in a nutritional primary prevention trial in infants at increased risk for type 1 diabetes. *Acta Paediatr.* 2011 Apr;100(4);557-564. PMID:21114527, PMCID: PMC4225541

Knip M, Virtanen SM, Becker D, Dupré J, Krischer JP, Åkerblom HK, for the TRIGR Study Group. Early feeding and risk of type 1 diabetes: experiences from the Trial to Reduce Insulin-dependent diabetes mellitus in the Genetically at Risk (TRIGR). *Am J Clin Nutr.* 2011; 94(6):1814S-1820S. PMID:21653795, PMCID:PMC3364078

2012 (5)

Luopajarvi K, Nieminen J, Ilonen J, Åkerblom HK, Knip M, Vaarala O. Expansion of CD4+CD25+FoxP3+ regulatory T cells in infants of mothers with type 1 diabetes. *Pediatr Diabetes* 2012; 13: 400-407. PMID:22332874, PMCID: PMC4225542

*Nucci AM, Becker DJ, Virtanen SM, Cuthbertson D, Softness B, Huot C, Wasikowa R, Dosch HM, Åkerblom HK, Knip M, the TRIGR Study Group. Growth differences between North American and European children at risk for type 1 diabetes. *Pediatr Diabetes* 2012; 13: 425-431. PMID: 22251851, PMCID:PMC3335929

*Vehik K, Cuthbertson D, Boulware D, Beam CA, Rodriguez H, Legault L, Hyytinen M, Rewers MJ, Schatz DA, Krischer JP, the TEDDY, TRIGR, Diabetes Prevention Trial-Type 1 and Type 1 Diabetes TrialNet Natural History Study Groups. Performance of HbA1c as an Early Diagnostic Indicator of Type 1 Diabetes in Children and Youth. *Diabetes Care* 2012; 35: 1821-1825. PMID:22699293, PMCID:PMC3425003

Åkerblom HK. Experiences from the initiation and execution of a multinational type 1 diabetes prevention trial. In Festschrift for Professor Christos S. Bartsocas, 2012 Oct. 26, Athens, Greece. Pp. 410-424.

Knip M, Simell O. Environmental triggers of type 1 diabetes. Cold Spring Harbor Perspectives in Medicine 2012 Jul; 2(7); a007690.
PMID:22762021, PMCID:PMC3385937

2013 (2)

de Goffau MC, Luopajarvi K, Knip M, Ilonen J, Ruohtula T, Härkönen T, Orivuori L, Hakala S, Welling GW, Harmsen HJ, Vaarala O. Fecal microbiota composition differs between children with β -cell autoimmunity and those without. Diabetes 2013; 62: 1238-44. PMID: 23274889, PMCID:PMC3609581

Virtanen SM, Uusitalo L, Knip M. Early introduction of complementary foods: Is there a link with type 1 diabetes. Diabetes Management 2013; 3: 53-59.

2014 (5)

Hadley D, Cheung RK, Becker DJ, Girgis R, Palmer JP, Cuthbertson D, Krischer JP, Dosch HM, the TRIGR North American Investigators. Large scale prospective T cell function assays in shipped, unfrozen blood samples: experiences from the multicenter TRIGR trial. Clin Vaccine Immunol. 2014; 21(2):203-11. PMID:24334687, PMCID:PMC3910927

Lehtonen E, Ormisson A, Nucci A, Cuthbertson D, Sorkio S, Hyytinen M, Alahuhta K, Berseth C, Salonen M, Taback S, Franciscus M, González-Frutos T, Korhonen TE, Lawson ML, Becker DJ, Krischer JP, Knip M, Virtanen SM, for the TRIGR Investigators. Use of vitamin D supplements during infancy in an international feeding trial. Public Health Nutr 2014; 17: 810-822.
PMID: 23795865, PMCID: PMC4225543

Franciscus Margaret, Nucci Anita, Bradley Brenda, Suomalainen Heli, Greenberg Ellen, Laforte Diane, Kleemola Päivi, Hyytinen Mila, Salonen Marja, Martin Mary Jean, Catte Daniel, Catteau Jacki and The TRIGR Investigators. Recruitment and retention of participants for an international type 1 diabetes prevention trial: A coordinators' perspective. Clin Trials 2014; 11: 150-158.
PMID:24216218, PMCID:PMC3972359

Knip M, Åkerblom HK, Becker D, Dosch HM, Dupre J, Fraser W, Howard N, Ilonen J, Krischer JP, Kordonouri O, Lawson ML, Palmer JP, Savilahti E, Vaarala O, Virtanen SM; for the TRIGR Study Group. Hydrolyzed Infant Formula and Early β -Cell Autoimmunity: A Randomized Clinical Trial. JAMA. 2014; 311(22): 2279-2287. PMID:24915259, PMCID: PMC4225544.

Knip M. Formula feeding and risk of diabetes. In: Preedy VR, Zibadi A, Watson RR (ed). Handbook of dietary and nutritional aspects of bottle feeding. Wageningen Academic Publishers, Wageningen, 2014: 531-544.

2015 (1)

Nucci AM, Virtanen SM, Becker DJ. Infant Feeding and Timing of Complementary Foods in the Development of Type 1 Diabetes. *Curr Diab Rep.* 2015 Sep;15(9):628. PMID:26202843

2016

Nucci AM, Virtanen SM, Sorkio S, Bärlund S, Cuthbertson D, Uusitalo U, Lawson ML, Salonen M, Berseth CL, Ormiston A, Lehtonen E, Savilahti E, Becker DJ, Dupré J, Krischer JP, Knip M, Åkerblom HK; TRIGR Investigators. Regional differences in milk and complementary feeding patterns in infants participating in an international nutritional type 1 diabetes prevention trial. *Matern Child Nutr.* 2016 Oct 7. doi: 10.1111/mcn.12354. [*Epub ahead of print*]

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