

## Supplemental Information

**SUPPLEMENTAL TABLE 5** Time to First Introduction to Gluten-Containing Cereals and Risk for CDA and CD According to Country

Gluten Introduction	United States			Finland			Germany			Sweden		
	<i>n</i> (%) <sup>a</sup>	HR (95% CI) <sup>b</sup>	<i>P</i>	<i>n</i> (%) <sup>a</sup>	HR (95% CI) <sup>b</sup>	<i>P</i>	<i>n</i> (%) <sup>a</sup>	HR (95% CI) <sup>b</sup>	<i>P</i>	<i>n</i> (%) <sup>a</sup>	HR (95% CI) <sup>b</sup>	<i>P</i>
<b>CDA</b>												
<17 wk	9 (9)	1.06 (0.51–2.19)	.88	6 (13)	1.26 (0.53–2.95)	.60	1 (6)	1.07 (0.12–9.31)	.96	36 (15)	1.00 (0.70–1.42)	.99
17–26 wk	37 (8)	1	—	46 (10)	1	—	5 (9)	1	—	227 (17)	1	—
>26 wk	182 (9)	1.0 (0.70–1.43)	.99	119 (12)	1.14 (0.80–1.60)	.47	35 (11)	1.12 (0.44–2.88)	.81	70 (15)	0.85 (0.65–1.11)	.85
<b>CD</b>												
<17 wk	2 (2)	0.65 (0.12–2.34)	.41	1 (2)	0.70 (0.09–5.40)	.73	0 (0)	NA	—	10 (4)	0.58 (0.30–1.11)	.10
17–26 wk	17 (4)	1	—	12 (3)	1	—	1 (2)	1	—	111 (8)	1	—
>26 wk	74 (4)	0.88 (0.52–1.50)	.64	39 (4)	1.21 (0.62–2.36)	.57	10 (3)	1.91 (0.24–15.2)	0.54	30 (6)	0.72 (0.48–1.08)	.11

CI, confidence interval; HR, hazard ratio; NA, not available; —, reference.

<sup>a</sup> Proportion of exposed children with CDA and CD in each time period.

<sup>b</sup> After adjusting for HLA, gender, and family history of CD.

**SUPPLEMENTAL TABLE 6** Gluten Introduction Under Conditions of Long-Term Continued Breastfeeding (>1 mo), Short-Term Continued Breastfeeding (Continued ≤1 mo After Gluten Introduction) and Discontinued Breastfeeding Before Gluten Introduction and the Risk for CDA and CD According to Country

Continued BF at Time of Gluten Introduction	US		Finland		Germany		Sweden	
	<i>n</i> (%) <sup>a</sup>	HR (95% CI) <sup>b</sup>	<i>n</i> (%) <sup>a</sup>	HR (95% CI) <sup>b</sup>	<i>n</i> (%) <sup>a</sup>	HR (95% CI) <sup>b</sup>	<i>n</i> (%) <sup>a</sup>	HR (95% CI) <sup>b</sup>
<b>Children with CDA</b>								
Long-term (continued >1 mo)	126 (10.4)	1.31 (0.99–1.71)	106 (12.0)	1.24 (0.87–1.75)	16 (9.8)	0.84 (0.44–1.61)	226 (17.5)	1.23 (0.95–1.59)
Short-term (continued ≤1 mo)	13 (7.7)	0.90 (0.50–1.62)	19 (14.0)	1.31 (0.77–2.24)	3 (8.6)	0.83 (0.24–2.86)	27 (17.0)	1.11 (0.72–1.72)
Discontinued previous gluten introduction	88 (7.9)	1	45 (10.0)	1	21 (13.1)	1	77 (13.6)	1
<b>Children with CD</b>								
Long-term (continued >1 mo)	53 (4.4)	1.39 (0.91–2.12)	31 (3.5)	1.05 (0.56–1.99)	5 (3.1)	0.97 (0.29–3.20)	97 (7.5)	0.99 (0.69–1.44)
Short-term (continued ≤1 mo)	4 (2.4)	0.67 (0.24–1.88)	7 (5.2)	1.29 (0.51–3.22)	0 (0)	0	14 (8.8)	1.17 (0.64–2.16)
Discontinued previous gluten introduction	36 (3.2)	1	14 (3.1)	1	5 (3.1)	1	38 (6.7)	1

CI, confidence interval; HR, hazard ratio; —, not applicable.

<sup>a</sup> Proportion of exposed children with CDA and CD, respectively, in each time period.

<sup>b</sup> Adjusted for HLA, gender, family history of CD, and age at gluten introduction.

### SUPPLEMENTAL APPENDIX THE TEDDY STUDY GROUP

#### Colorado Clinical Center:

Marian Rewers, MD, PhD, PI,<sup>1,4,5,6,10,11</sup> Kimberly Bautista,<sup>12</sup> Judith Baxter,<sup>9,10,12,15</sup> Ruth Bedoy,<sup>2</sup> Patricia Gesualdo,<sup>2,6,12,14,15</sup> Michelle Hoffman,<sup>12,13,14</sup> Rachel Karban,<sup>12</sup> Edwin Liu, MD,<sup>13</sup> Jill Norris, PhD,<sup>2,3,12</sup> Kathleen Waugh,<sup>6,7,12,15</sup> Adela Samper-Imaz, Andrea Steck, MD,<sup>3,14</sup> University of Colorado, Anschutz Medical Campus,

Barbara Davis Center for Childhood Diabetes.

#### Georgia/Florida Clinical Center:

Jin-Xiong She, PhD, PI,<sup>1,3,4,11†</sup> Desmond Schatz, MD,<sup>4,5,7,8</sup> Diane Hopkins,<sup>12</sup> Leigh Steed,<sup>12,13,14,15</sup> Jamie Thomas,<sup>6,12</sup> Katherine Silvis,<sup>2</sup> Michael Haller, MD,<sup>6,14</sup> Meena Shankar,<sup>6,12</sup> Eleni Sheehan,<sup>6</sup> Melissa Gardiner, Richard McIndoe, PhD, Haitao Liu, MD,<sup>†</sup> John Nechtman,<sup>†</sup>

Ashok Sharma, Joshua Williams, Gabriela Foghis, Stephen W. Anderson, MD.<sup>^</sup> Medical College of Georgia, Georgia Regents University. \*University of Florida, †Jinfiniti Biosciences LLC, Augusta, GA, ^Pediatric Endocrine Associates, Atlanta, GA.

#### Germany Clinical Center:

Anette G. Ziegler, MD, PI,<sup>1,3,4,11</sup> Andreas Beyerlein PhD,<sup>2</sup> Ezio Bonifacio PhD,<sup>6,5</sup> Michael Hummel, MD,<sup>13</sup> Sandra Hummel,

PhD,<sup>2</sup> Kristina Foterek,<sup>¥2</sup> Mathilde Kersting, PhD,<sup>¥2</sup> Annette Knopff,<sup>7</sup> Sibylle Koletzko, MD,<sup>¶13</sup> Claudia Peplow,<sup>12</sup> Roswith Roth, PhD,<sup>9</sup> Joanna Stock,<sup>9,12</sup> Elisabeth Strauss,<sup>12</sup> Katharina Warncke, MD,<sup>14</sup> Christiane Winkler, PhD,<sup>2,12,15</sup> Forschergruppe Diabetes e.V. and Institute of Diabetes Research, Helmholtz Zentrum München, and Klinikum rechts der Isar, Technische Universität München. \*Center for Regenerative Therapies, TU Dresden, ¶Dr. von Hauner Children's Hospital, Department of Gastroenterology, Ludwig Maximilians University Munich, ¥Research Institute for Child Nutrition, Dortmund.

#### Finland Clinical Center:

Olli G. Simell, MD, PhD, PI,<sup>¥1,4,11,13</sup> Jorma Toppari, MD, PhD, Co-PI,<sup>4</sup> Heikki Hyöty, MD, PhD,<sup>\*±6</sup> Jorma Ilonen, MD, PhD,<sup>¥¶5</sup> Miia Kähönen,<sup>μ°</sup> Mikael Knip, MD, PhD,<sup>\*±5</sup> Annika Koivu,<sup>¥^</sup> Mirva Koreasalo,<sup>\*±§2</sup> Kalle Kurppa, MD, PhD,<sup>\*±13</sup> Maria Lönnrot, MD, PhD,<sup>\*±6</sup> Elina Mäntymäki,<sup>¥^</sup> Katja Multasuo,<sup>μ°</sup> Juha Mykkänen, PhD,<sup>^¥3</sup> Tiina Niininen,<sup>±\*12</sup> Mia Nyblom,<sup>\*±</sup> Jenna Rautanen,<sup>±§</sup> Anne Riikonen,<sup>\*±</sup> Minna Romo,<sup>¥^</sup> Aaro Simell,<sup>¥^</sup> Barbara Simell,<sup>¥^9,12,15</sup> Satu Simell, MD, PhD,<sup>\*±13</sup> Tuula Simell, PhD,<sup>¥^9,12</sup> Ville Simell,<sup>^¥13</sup> Mäija Sjöberg,<sup>¥^12,14</sup> Aino Stenius,<sup>μ°12</sup> Eeva Varjonen,<sup>¥^12</sup> Riitta Veijola, MD, PhD,<sup>μ°14</sup> Suvi M. Virtanen, MD, PhD,<sup>\*±§,2</sup> Mari Åkerlund,<sup>\*±§</sup> ¥University of Turku, \*University of Tampere, μUniversity of Oulu, ^Turku University Hospital, ±Tampere University Hospital, °Oulu University Hospital, §National Institute for Health and Welfare, Finland, ¶University of Kuopio.

#### Sweden Clinical Center:

Åke Lernmark, PhD, PI,<sup>1,3,4,5,6,8,10,11,15</sup> Daniel Agårdh, MD, PhD,<sup>13</sup> Carin Andrén Aronsson,<sup>2,13</sup> Maria Ask, Jenny Bremer, Ulla-Marie Carlsson, Corrado Cilio, PhD, MD,<sup>5</sup> Camilla Ekstrand, Emelie Ericson-Hallström,<sup>2</sup> Lina Fransson, Thomas Gard, Joanna Gerardsson, Rasmus Håkansson,

Monica Hansen, Gertie Hansson,<sup>12,14</sup> Susanne Hyberg, Fredrik Johansen, Berglind Jonasdottir, MD, Linda Jonsson, Helena Larsson, MD, PhD,<sup>6,14</sup> Barbro Lernmark, PhD, Maria Månsson-Martinez, Maria Markan, Theodosia Massadakis, Jessica Melin,<sup>12</sup> Zeliha Mestan, Kobra Rahmati, Anita Ramelius, Monica Sedig Järvirova, Sara Sibthorpe, Birgitta Sjöberg, Ulrica Swartling, PhD,<sup>9,12</sup> Erika Trulsson, Carina Törn, PhD,<sup>3,15</sup> Anne Wallin, Åsa Wimar,<sup>12</sup> Sofie Åberg, Department of Clinical Sciences, Lund University.

#### Washington Clinical Center:

William A. Hagopian, MD, PhD, PI,<sup>1,3,4,5,6,7,11,13,14</sup> Xiang Yan, MD, Michael Killian,<sup>6,7,12,13</sup> Claire Cowen Crouch,<sup>12,14,15</sup> Jennifer Skidmore,<sup>2</sup> Stephen Ayres, Kayleen Dunson, Diana Heaney, Rachel Hervey, Renee Kindschi, Arlene Meyer, Denise Mulenga, Elizabeth Scott, Joshua Stabbert, Nancy Williams, John Willis. Pacific Northwest Diabetes Research Institute.

#### Pennsylvania Satellite Center:

Dorothy Becker, MD, Margaret Franciscus,<sup>12</sup> Mary Ellen Dalmagro-Elias Smith,<sup>2</sup> Ashi Daftary, MD, Mary Beth Klein. Children's Hospital of Pittsburgh of UPMC.

#### Data Coordinating Center:

Jeffrey P. Krischer, PhD, PI,<sup>1,4,5,10,11</sup> Michael Abbondandolo, Sarah Austin-Gonzalez, Rasheedah Brown,<sup>12,15</sup> Brant Burkhardt, PhD,<sup>5,6</sup> Martha Butterworth,<sup>2</sup> David Cuthbertson, Christopher Eberhard, Steven Fiske,<sup>9</sup> Dena Garcia, Veena Gowda, David Hadley, PhD,<sup>3,13</sup> Hye-Seung Lee, PhD,<sup>1,2,13,15</sup> Shu Liu, Xiang Liu, PhD,<sup>2,9,12</sup> Kristian Lynch, Ph.D.,<sup>5,6,9,15</sup> Jamie Malloy, Cristina McCarthy,<sup>12,15</sup> Wendy McLeod,<sup>2,5,6,13,15</sup> Chris Shaffer, Laura Smith, PhD,<sup>9,12</sup> Susan Smith,<sup>12,15</sup> Roy Tamura, PhD,<sup>1,2,13</sup> Ulla Uusitalo, PhD,<sup>2,15</sup> Kendra Vehik, PhD,<sup>4,5,6,14,15</sup> Earnest Washington, Jimin Yang, PhD, RD,<sup>2,15</sup> University of South Florida.

#### Project Scientist:

Beena Akolkar, PhD,<sup>1,3,4,5,6,7,10,11</sup> National Institute of Diabetes and Digestive and Kidney Diseases.

#### Other Contributors:

Kasia Bourcier, PhD,<sup>5</sup> National Institute of Allergy and Infectious Diseases. Thomas Briesse, PhD,<sup>6,15</sup> Columbia University. Suzanne Bennett Johnson, PhD,<sup>9,12</sup> Florida State University. Steve Oberste, PhD,<sup>6</sup> Centers for Disease Control and Prevention. Eric Triplett, PhD,<sup>6</sup> University of Florida.

#### Autoantibody Reference Laboratories:

Liping Yu, MD,<sup>^5</sup> Dongmei Miao, MD,<sup>^</sup> Polly Bingley, MD, FRCP,<sup>\*5</sup> Alistair Williams,\* Kyla Chandler,\* Saba Rokni,\* Joanna Boldison,\* Jacob Butterly,\* Jessica Broadhurst,\* Gabriella Carreno,\* Claire Caygill,\* Rachel Curnock,\* Peter Easton,\* Ivey Geoghan,\* Julia Goode,\* Anna Long,\* Molly Payne,\* James Pearson,\* Charles Reed,\* Sophie Ridewood,\* Rebecca Wyatt.\* ^Barbara Davis Center for Childhood Diabetes, University of Colorado Denver, \*School of Clinical Sciences, University of Bristol, UK.

#### Cortisol Laboratory:

Elisabeth Aardal Eriksson, MD, PhD, Ewa Lönn Karlsson. Department of Clinical Chemistry, Linköping University Hospital, Linköping, Sweden.

#### Dietary Biomarkers Laboratory:

Iris Erlund, PhD,<sup>2</sup> Irma Salminen, Jouko Sundvall, Jaana Leiviskä, Mari Lehtonen, PhD. National Institute for Health and Welfare, Helsinki, Finland.

#### HbA1c Laboratory:

Randie R. Little, PhD, Alethea L. Tennill. Diabetes Diagnostic Laboratory, Department of Pathology, University of Missouri School of Medicine.

**HLA Reference Laboratory:**

Henry Erlich, PhD,<sup>3</sup> Steven J. Mack, PhD, Anna Lisa Fear. Center for Genetics, Children's Hospital Oakland Research Institute.

**Metabolomics Laboratory:**

Oliver Fiehn, PhD, Bill Wikoff, PhD, Tobias Kind, PhD, Mine Palazoglu, Joyce Wong, Gert Wohlgemuth. UC Davis Metabolomics Center.

**Microbiome and Viral Metagenomics Laboratory:**

Joseph F. Petrosino, PhD.<sup>6</sup> Alkek Center for Metagenomics and Microbiome Research, Department of Molecular Virology and Microbiology, Baylor College of Medicine.

**OGTT Laboratory:**

Santica M. Marcovina, PhD, ScD, Vinod P. Gaur, PhD. Northwest Lipid Metabolism and Diabetes Research Laboratories, University of Washington.

**Repository:**

Heather Higgins, Sandra Ke. NIDDK Biosample Repository at Fisher Bio- Services.

**RNA Laboratory and Gene Expression Laboratory:**

Jin-Xiong She, PhD, PI,<sup>1,3,4,11</sup> Richard McIndoe, PhD, Haitao Liu, MD, John Nechtman, Yansheng Zhao, Na Jiang, MD. Jinfiniti Biosciences, LLC.

**SNP Laboratory:**

Stephen S. Rich, PhD,<sup>3</sup> Wei-Min Chen, PhD,<sup>3</sup> Suna Onengut-Gumuscu, PhD,<sup>3</sup> Emily Farber, Rebecca Roche Pickin, PhD, Jordan Davis, Dan Gallo. Center for Public Health Genomics, University of Virginia.

**Committees:**

<sup>1</sup>Ancillary Studies, <sup>2</sup>Diet, <sup>3</sup>Genetics, <sup>4</sup>Human Subjects/Publicity/Publications, <sup>5</sup>Immune Markers, <sup>6</sup>Infectious Agents, <sup>7</sup>Laboratory Implementation, <sup>8</sup>Maternal Studies, <sup>9</sup>Psychosocial, <sup>10</sup>Quality Assurance, <sup>11</sup>Steering, <sup>12</sup>Study Coordinators, <sup>13</sup>Celiac Disease, <sup>14</sup>Clinical Implementation, <sup>15</sup>Quality Assurance Subcommittee on Data Quality.