

## Supplementary Data

Bittker SS, Bell KR. Acetaminophen, antibiotics, ear infection, breastfeeding, vitamin D drops and autism: an epidemiological study. *Neuropsychiatric Disease and Treatment*. 2018.

### Contents

|  |
|--|
| Table S1 Groups where survey was highlighted                             |
| Table S2 Encoding of exposure variables                                  |
| Table S3 Encoding of demographic variables                               |
| Table S4 Dose-dependent ORs relative to no exposure                      |
| Table S5 Correlation matrix n per variable pair                          |
| Table S6 Correlation matrix p-value per variable pair                    |
| Table S7 aORs without gender as a covariate                              |
| Table S8 Specialized general linear models without gender as a covariate |

### Table S1 Groups where survey was highlighted

| Group   | Group type        | Primary channel |
|---|-------------------|-----------------|
| A.L.O.H.A.S. Autism, ADHD and Sensory Support                   | ASD               | Facebook        |
| ACS – SEPAC   | Other             | Facebook        |
| ACS Moms and Dads   | Other             | Facebook        |
| Alabama Autism Families   | ASD               | Facebook        |
| Alaska Families on the Autism Spectrum                          | ASD               | Facebook        |
| Alianza de Autismo de PR - Grupo de Apoyo Mundial               | ASD               | Facebook        |
| All About Autism  | ASD               | Facebook        |
| All Parents Questions   | General Parenting | Facebook        |
| AMFAS Fort Bragg - American Military Families Autism Support... | ASD               | Facebook        |
| AMFAS Washington DC - Capital Region - Autism Support community | ASD               | Facebook        |
| Arkansas Autism Network   | ASD               | Facebook        |
| ASK US Florida Online Autism Support Group                      | ASD               | Facebook        |
| Aspergers / Autism Family Support Group for Tuscaloosa...       | ASD               | Facebook        |
| Autism (A Mothers Support Group)                                | ASD               | Facebook        |
| Autism and Asperger's Awareness and Support, West Tennessee     | ASD               | Facebook        |
| Autism and Special Needs in carter County                       | ASD               | Facebook        |

|   |     |          |
|---|-----|----------|
| Autism Awareness  | ASD | Facebook |
| Autism Banning Together                                 | ASD | Facebook |
| Autism Coalition of Nevada (ACON)                       | ASD | Facebook |
| Autism Connects CT                                      | ASD | Facebook |
| Autism Doorway to Consciousness                         | ASD | Facebook |
| Autism Families Group                                   | ASD | Facebook |
| Autism Families of Aurora, Colorado & Surrounding Areas | ASD | Facebook |
| Autism Families on Long Island, NY                      | ASD | Facebook |
| Autism Family Support - Harrisburg Area                 | ASD | Facebook |
| Autism for Sale   | ASD | Facebook |
| Autism Group  | ASD | Facebook |
| Autism Happens Foundation                               | ASD | Facebook |
| Autism Idaho  | ASD | Facebook |
| Autism in Colorado                                      | ASD | Facebook |
| Autism in Connecticut                                   | ASD | Facebook |
| Autism in Louisiana                                     | ASD | Facebook |
| Autism in North Idaho                                   | ASD | Facebook |
| Autism in Oregon  | ASD | Facebook |
| Autism in the African American Community                | ASD | Facebook |
| Autism in the Black Community USA                       | ASD | Facebook |
| Autism Insurance Advocacy for Alabama Group             | ASD | Facebook |
| Autism Mom's Love                                       | ASD | Facebook |
| Autism Moms of East Tennessee                           | ASD | Facebook |
| Autism Moms of Seattle                                  | ASD | Facebook |
| Autism Moms Support Group of Washington D.C.            | ASD | Facebook |
| Autism Movement Therapy Group                           | ASD | Facebook |
| Autism New Jersey                                       | ASD | Listserv |
| Autism Ohio   | ASD | Facebook |
| Autism Parent Support and Chat Southern California      | ASD | Facebook |
| Autism Parents and Family of Delaware County PA         | ASD | Facebook |
| Autism Parents of Arizona                               | ASD | Facebook |
| Autism Parents of Frederick County, MD                  | ASD | Facebook |
| Autism Parents of Weatherford, OK & Surrounding Area    | ASD | Facebook |
| Autism Parents Support and Discussion Group             | ASD | Facebook |
| Autism Parents Support Group of Las Vegas               | ASD | Facebook |
| Autism Parents Support Group South Mississippi          | ASD | Facebook |
| Autism Rocks Support Network                            | ASD | Facebook |
| Autism Society of Akron                                 | ASA | Facebook |
| Autism Society of Alabama                               | ASA | Facebook |
| Autism Society of Berks County                          | ASA | Facebook |
| Autism Society of Blue Grass                            | ASA | Facebook |
| Autism Society of Central New York                      | ASA | Facebook |
| Autism Society of Central Ohio                          | ASA | Facebook |

|   |     |          |
|---|-----|----------|
| Autism Society of Central Virginia                        | ASA | Listserv |
| Autism Society of East Tennessee                          | ASA | Website  |
| Autism Society of Greater Baton Rouge                     | ASA | Facebook |
| Autism Society of Greater Harrisburg                      | ASA | Facebook |
| Autism Society of Greater New Orleans                     | ASA | Facebook |
| Autism Society of Hawaii                                  | ASA | Facebook |
| Autism Society of Howard County                           | ASA | Listserv |
| Autism Society of Indiana                                 | ASA | Facebook |
| Autism Society of Inland Empire                           | ASA | Listserv |
| Autism Society of Iowa                                    | ASA | Facebook |
| Autism Society of Maine                                   | ASA | Facebook |
| Autism Society of Michigan                                | ASA | Facebook |
| Autism Society of Minnesota                               | ASA | Facebook |
| Autism Society of Nassau / Suffolk                        | ASA | Listserv |
| Autism Society of New Mexico                              | ASA | Facebook |
| Autism Society of North Carolina                          | ASA | Facebook |
| Autism Society of North Carolina Guilford County Chapter  | ASA | Facebook |
| Autism Society of Northeast Wisconsin                     | ASA | Facebook |
| Autism Society of Peoria                                  | ASA | Facebook |
| Autism Society of South Carolina                          | ASA | Listserv |
| Autism Society of Southcentral Wisconsin                  | ASA | Facebook |
| Autism Society of Southeastern Wisconsin                  | ASA | Facebook |
| Autism Society of Texas                                   | ASA | Listserv |
| Autism Society of the Heartland                           | ASA | Facebook |
| Autism Society of Westmoreland                            | ASA | Facebook |
| Autism Speaks Parents Wisconsin                           | ASD | Facebook |
| Autism Speaks Team Page of Northern Kentucky              | ASD | Facebook |
| Autism Spectrum Disorder Moms and Dads                    | ASD | Facebook |
| Autism Spectrum Disorder, through my eyes                 | ASD | Facebook |
| Autism Spectrum on the Emerald Coast                      | ASD | Facebook |
| Autism Spectrum Parents (Stamford, Norwalk, Fairfield)    | ASD | Facebook |
| Autism Support - Kansas City                              | ASD | Facebook |
| Autism Support & News for Maryland                        | ASD | Facebook |
| Autism Support and Discussion Group                       | ASD | Facebook |
| Autism Support Group - Albuquerque, New Mexico            | ASD | Facebook |
| Autism Support Group (Central Illinois)                   | ASD | Facebook |
| Autism Support Group East Texas                           | ASD | Facebook |
| Autism Support Group for New England Parents / Caregivers | ASD | Facebook |
| Autism Support Group Maryland                             | ASD | Facebook |
| Autism Support Group Northern Nevada                      | ASD | Facebook |
| Autism Support Group of Central Maine                     | ASD | Facebook |
| Autism Support of Laramie, WY                             | ASD | Facebook |
| Autism Talk in Hobbs NM                                   | ASD | Facebook |

|   |                   |          |
|---|-------------------|----------|
| Autism the Fight for our Children in Wyoming                      | ASD               | Facebook |
| Autism Warriors   | ASD               | Facebook |
| Autism: Southern Indiana Network                                  | ASD               | Facebook |
| Autismo Especial Love   | ASD               | Facebook |
| AutismTalk  | ASD               | Facebook |
| B.A.M.M. (Black Autism Mom's Movement)                            | ASD               | Facebook |
| Becoming a Father or Mother Was the Greatest Gift of my Life      | General Parenting | Facebook |
| Boston Autism Moms/Dads   | ASD               | Facebook |
| California Autism Foundation                                      | ASD               | Facebook |
| Catholic Autism Support   | ASD               | Facebook |
| Central Arkansas Autism Families                                  | ASD               | Facebook |
| Cherokee / Cobb County Autism Support Network                     | ASD               | Facebook |
| Children with ADHD & ASD & Developmental Disorders in New York... | Other             | Facebook |
| Christian Autism Support  | ASD               | Facebook |
| Cleveland Park Moms   | General Parenting | Listserv |
| Coastal Georgia Autism Network                                    | ASD               | Facebook |
| Columbus Autism Parents   | ASD               | Facebook |
| Comanche County Autism and Sensory Community                      | ASD               | Facebook |
| Comanche County Autism Support Group                              | ASD               | Facebook |
| Coventry Moms   | General Parenting | Facebook |
| CT Crunchy Autism Support Group                                   | ASD               | Facebook |
| Dayton Ohio Area Autism Support                                   | ASD               | Facebook |
| DC Metro Area Autism Parents                                      | ASD               | Facebook |
| Denise's List   | ASD               | Listserv |
| Denver Autism Parents   | ASD               | Facebook |
| Dickinson ND Autism Support Group                                 | ASD               | Facebook |
| Douglas County Autism Society of Oregon                           | ASA               | Facebook |
| Du Page County Illinois Autism Awareness Support Group            | ASD               | Facebook |
| Families for Autism Support of Texoma (F.A.S.T.)                  | ASD               | Facebook |
| Families with Autism Kids   | ASD               | Facebook |
| Florida Autism Parents and Friends Support Group                  | ASD               | Facebook |
| Franklin MA area Autism families                                  | ASD               | Facebook |
| Fresno County Autism Families                                     | ASD               | Facebook |
| Goalie Moms - A Breed of Our Own                                  | General Parenting | Facebook |
| Grand Rapids Area Autism Moms and Dads                            | ASD               | Facebook |
| Greater Baton Rouge Autism Community                              | ASD               | Facebook |
| Grupo de Apoyo Familias con Autismo Dentro y Fuera de Puerto Rico | ASD               | Facebook |
| Helping Mothers   | General Parenting | Facebook |
| Hoboken Moms  | General Parenting | Listserv |
| Hockey Goalie Parents   | General Parenting | Facebook |
| Houston Area Autism Community                                     | ASD               | Facebook |
| I Love Someone with Autism in Kansas                              | ASD               | Facebook |
| Illinois Autism Awareness Group                                   | ASD               | Facebook |

|   |                   |          |
|---|-------------------|----------|
| Interactive Autism Network                          | ASD               | Listserv |
| Kansas City Christian Moms Club                     | General Parenting | Facebook |
| Kansas City Parents Autism Group                    | ASD               | Facebook |
| Kentucky Autism Awareness                           | ASD               | Facebook |
| Lawrence County Autism Warriors                     | ASD               | Listserv |
| Los Angeles Del Autismo                             | ASD               | Facebook |
| LuLaRoe to Benefit Autism Delaware                  | ASD               | Facebook |
| Madres Contra el Autismo                            | ASD               | Facebook |
| Madres del Autismo                                  | ASD               | Facebook |
| Mamás Tgd Autismo Zona Sur                          | ASD               | Facebook |
| Maui Mommies Main Group                             | General Parenting | Facebook |
| Milestones  | ASD               | Website  |
| MN ASD Parents to Parents Support                   | ASD               | Facebook |
| Moms Club of Delaware, Ohio                         | General Parenting | Facebook |
| Moms, Mamas, & Mothers                              | General Parenting | Facebook |
| Montana Autism                                      | ASD               | Facebook |
| Montana Community Autism and Asperger's Network     | ASD               | Facebook |
| Mothers of Children with Autism (MCA)               | ASD               | Facebook |
| Mountain Home Idaho Autism and More                 | ASD               | Facebook |
| National Autism Association - Southeast Ohio        | ASD               | Facebook |
| NJ Autism Moms                                      | ASD               | Facebook |
| North Georgia Autism Support Group                  | ASD               | Facebook |
| Northeast Nebraska Autism Support Group             | ASD               | Facebook |
| Ohio Autism Community                               | ASD               | Facebook |
| Oklahoma Autism Spectrum & Sensory Group            | ASD               | Facebook |
| Oldtownmoms   | General Parenting | Listserv |
| Oregon Parents of Children on the Autism Spectrum   | ASD               | Facebook |
| Parent Talk   | General Parenting | Facebook |
| Parents of Autistic Children                        | ASD               | Facebook |
| Petitioning to Open a School in Delaware County, PA | ASD               | Facebook |
| Phoenix West Valley Autism Families                 | ASD               | Facebook |
| Portland Autism Parents                             | ASD               | Facebook |
| Puzzle Pieces - Autism Support in Montgomery AL     | ASD               | Facebook |
| Rhode Island Spectrum Connection                    | ASD               | Facebook |
| Salt Lake Autism Spectrum Support Group             | ASD               | Facebook |
| San Diego Autism Support Group                      | ASD               | Facebook |
| Sioux Falls Autism Families                         | ASD               | Facebook |
| South Georgia Autism Families                       | ASD               | Facebook |
| South Mississippi: Autism Support Community         | ASD               | Facebook |
| Southeast Alabama Autism Support Network            | ASD               | Facebook |
| Southeast Idaho Autism Support Group                | ASD               | Facebook |
| Southern California Autism Families                 | ASD               | Facebook |
| Southern Oregon Autism Parent Support               | ASD               | Facebook |

|   |                   |          |
|---|-------------------|----------|
| Southern Utah Autism Support Group - Community Discussions    | ASD               | Facebook |
| Southwest Virginia Autism Support Group                       | ASD               | Facebook |
| Southwestern Illinois Autism Resources and Support            | ASD               | Facebook |
| Spectrum Parents  | ASD               | Facebook |
| Stay at Home Moms   | General Parenting | Facebook |
| Stay at Home Moms Looking for Online Work USA                 | General Parenting | Facebook |
| Stay at Home Moms/Dads  | General Parenting | Facebook |
| Sunnymoms   | General Parenting | Listserv |
| Support Group for parents with kids with ADHD, ADD, Autism... | Other             | Facebook |
| Takomapakk  | General Parenting | Listserv |
| TEAAM - Together Enhancing Autism Awareness in Mississippi    | ASD               | Facebook |
| The Naked Truth: Autism in Northwest Louisiana                | ASD               | Facebook |
| The Real Parents of Autism: Maryland, DC, Virginia            | ASD               | Facebook |
| Tippecanoe Area Autism Parents                                | ASD               | Facebook |
| Train 4 Autism: Upstate NY Autism Warriors                    | ASD               | Facebook |
| Tulsa Parents of Children with Autism Spectrum Disorders      | ASD               | Facebook |
| Utah Autism Moms  | ASD               | Facebook |
| Utah County Autism and Aspergers Parents                      | ASD               | Facebook |
| ValeriesList  | ASD               | Listserv |
| Weber County Autism Family Support                            | ASD               | Facebook |
| West Ga. Autism Love, Support and Awareness                   | ASD               | Facebook |
| West Georgia Autism Support Group                             | ASD               | Facebook |
| West Virginia Autism Families Support Group of Charleston     | ASD               | Facebook |
| West Virginia Autism Training Center                          | ASD               | Facebook |
| Western Colorado Autism Connection                            | ASD               | Facebook |
| Wisconsin Autism Parents                                      | ASD               | Facebook |
| Work at Home Moms   | General Parenting | Listserv |
| Young Boys & Girls ASD Social / Support Group                 | ASD               | Listserv |

Abbreviations: ASA = Autism Society of America chapter.

**Table S2** Encoding of exposure variables

| Factor                 | Answer                                 | Code |
|------------------------|--|------|
| Breastfeeding (months) | This child was never breastfed         | 0    |
|                        | 3 months or less                       | 3    |
|                        | More than 3 months and up to 6 months  | 6    |
|                        | More than 6 months and up to 12 months | 12   |
|                        | More than 12 months                    | 18   |
|                        | I'm not sure                           | NA   |
| Antibiotic (courses)   | None                                   | 0    |
|                        | 1                                      | 1    |
|                        | 2-3                                    | 2    |

|                                       |  |     |
|---------------------------------------|--|-----|
|                                       | 4-7  | 4   |
|                                       | 8-15   | 8   |
|                                       | 16+  | 16  |
|                                       | I'm not sure   | NA  |
| Low granularity antibiotic (courses)  | None   | 0   |
|                                       | 1  | 1   |
|                                       | 2-3  | 2   |
|                                       | 4-7  | 4   |
|                                       | 8-15   | 4   |
|                                       | 16+  | 4   |
|                                       | I'm not sure   | NA  |
| Ear infection (#)                     | None   | 0   |
|                                       | 1  | 1   |
|                                       | 2-3  | 2   |
|                                       | More than 3 or persistent ear infections                 | 4   |
|                                       | I'm not sure   | NA  |
| Acetaminophen (doses)                 | None   | 0   |
|                                       | 1-3  | 1   |
|                                       | 4-15   | 4   |
|                                       | 16-63  | 16  |
|                                       | 64+  | 64  |
|                                       | I'm not sure   | NA  |
| Ibuprofen (doses)                     | None   | 0   |
|                                       | 1-3  | 1   |
|                                       | 4-15   | 4   |
|                                       | 16-63  | 16  |
|                                       | 64+  | 64  |
|                                       | I'm not sure   | NA  |
| Vitamin D duration (months)           | This child did not receive Vitamin D drops as a baby     | 0   |
|                                       | 3 months or less   | 3   |
|                                       | More than 3 months and up to 6 months                    | 6   |
|                                       | More than 6 months and up to 12 months                   | 12  |
|                                       | More than 12 months                                      | 18  |
|                                       | I'm not sure   | NA  |
| Vitamin D dose (normalized to 400 IU) | This child did not receive Vitamin D drops as a baby     | 0   |
|                                       | Less than the standard dose                              | 0.5 |
|                                       | About the standard dose                                  | 1   |
|                                       | More than the standard dose                              | 1.5 |
|                                       | I'm not sure   | NA  |
| Folate (first trimester binary)       | Yes, for the entire pregnancy or nearly entire pregnancy | 1   |
|                                       | Yes, during the first trimester                          | 1   |

|  |                                |    |
|--|--------------------------------|----|
|  | Yes, after the first trimester | 0  |
|  | No                             | 0  |
|  | I'm not sure                   | NA |

**Table S3** Encoding of demographic variables

| Variable            | Answer                           | Code |
|---------------------|----------------------------------|------|
| Ethnicity           | White (non-Hispanic)             | 0    |
|                     | Hispanic / Latino                | 1    |
|                     | African American / Black         | 1    |
|                     | Asian                            | 1    |
|                     | Hawaiian / Pacific Islander      | 1    |
|                     | Native American                  | 1    |
|                     | Other                            | 1    |
| Education of Mother | Grade school or some high school | 0    |
|                     | High school                      | 0    |
|                     | Some college                     | 1    |
|                     | Bachelor's or Associate's degree | 2    |
|                     | Graduate or professional degree  | 3    |
|                     | I'm not sure                     | NA   |
| Gender              | Male                             | 1    |
|                     | Female                           | 0    |
| Relationship        | Biological father                | 1    |
|                     | Biological mother                | 0    |
|                     | NA                               | NA   |
| Midwest             | Northeast                        | 0    |
|                     | Midwest                          | 1    |
|                     | South                            | 0    |
|                     | West                             | 0    |
| South               | Northeast                        | 0    |
|                     | Midwest                          | 0    |
|                     | South                            | 1    |
|                     | West                             | 0    |



**Table S4** Dose-dependent ORs relative to no exposure

| Question <sup>a</sup> / Variable                     | Cases<br>n (%) | Controls<br>n (%) | OR        | 95% CI         | p-value  |
|--|----------------|-------------------|-----------|----------------|----------|
| <b>Duration of breastfeeding?</b>                    |                |                   |           |                |          |
| Never breastfed                                      | 234 (23.4)     | 70 (13.6)         | Reference |                | -        |
| 3 months or less                                     | 277 (27.7)     | 80 (15.6)         | 1.036     | 0.719 - 1.492  | 0.8502   |
| More than 3 months and up to 6 months                | 118 (11.8)     | 66 (12.8)         | 0.535     | 0.358 - 0.800  | 0.0022*  |
| More than 6 months and up to 12 months               | 155 (15.5)     | 90 (17.5)         | 0.515     | 0.355 - 0.748  | 0.0004*  |
| More than 12 months                                  | 217 (21.7)     | 208 (40.5)        | 0.312     | 0.225 - 0.433  | <0.0001* |
| <b>Courses of antibiotics up to second birthday?</b> |                |                   |           |                |          |
| None   | 194 (19.4)     | 141 (27.4)        | Reference |                | -        |
| 1  | 174 (17.4)     | 132 (25.7)        | 0.958     | 0.700 - 1.311  | 0.7887   |
| 2-3  | 282 (28.2)     | 133 (25.9)        | 1.541     | 1.143 - 2.079  | 0.0045*  |
| 4-7  | 181 (18.1)     | 64 (12.5)         | 2.055     | 1.437 - 2.941  | 0.0001*  |
| 8-15   | 71 (7.1)       | 19 (3.7)          | 2.716     | 1.566 - 4.711  | 0.0003*  |
| 16+  | 18 (1.8)       | 4 (0.8)           | 3.271     | 1.083 - 9.874  | 0.0270*  |
| I'm not sure   | 81 (8.1)       | 21 (4.1)          | -         | -              | -        |
| <b>Ear infections up to second birthday?</b>         |                |                   |           |                |          |
| None   | 341 (34.1)     | 230 (44.7)        | Reference |                | -        |
| 1  | 179 (17.9)     | 115 (22.4)        | 1.050     | 0.787 - 1.400  | 0.7404   |
| 2-3  | 208 (20.8)     | 76 (14.8)         | 1.846     | 1.352 - 2.520  | 0.0001*  |
| More than 3 or persistent                            | 246 (24.6)     | 84 (16.3)         | 1.975     | 1.147 - 2.663  | <0.0001* |
| I'm not sure   | 27 (2.7)       | 9 (1.8)           | -         | -              | -        |
| <b>Doses of acetaminophen up to second birthday?</b> |                |                   |           |                |          |
| None   | 54 (5.4)       | 45 (8.8)          | Reference |                | -        |
| 1-3  | 174 (17.4)     | 91 (17.7)         | 1.593     | 0.996 - 2.549  | 0.0511   |
| 4-15   | 378 (37.8)     | 216 (42.0)        | 1.458     | 0.949 - 2.241  | 0.0839   |
| 16-63  | 191 (19.1)     | 107 (20.8)        | 1.488     | 0.938 - 2.359  | 0.0904   |
| 64+  | 26 (2.6)       | 4 (0.8)           | 5.417     | 1.759 - 16.677 | 0.0015*  |
| I'm not sure   | 178 (17.8)     | 51 (9.9)          | -         | -              | -        |
| <b>Doses of ibuprofen up to second birthday?</b>     |                |                   |           |                |          |
| None   | 185 (18.5)     | 115 (22.4)        | Reference |                | -        |
| 1-3  | 167 (16.7)     | 91 (17.7)         | 1.141     | 0.808 - 1.612  | 0.4549   |
| 4-15   | 304 (30.4)     | 180 (35.0)        | 1.050     | 0.780 - 1.413  | 0.7481   |
| 16-63  | 141 (14.1)     | 74 (14.4)         | 1.184     | 0.822 - 1.706  | 0.3634   |
| 64+  | 17 (1.7)       | 6 (1.2)           | 1.761     | 0.675 - 4.597  | 0.2422   |
| I'm not sure   | 187 (18.7)     | 48 (9.3)          | -         | -              | -        |
| <b>Duration of vitamin D drops as a baby?</b>        |                |                   |           |                |          |
| No Vitamin D drops as a baby                         | 642 (64.1)     | 307 (59.7)        | Reference |                | -        |
| 3 months or less                                     | 108 (10.8)     | 85 (16.5)         | 0.608     | 0.443 - 0.833  | 0.0018*  |
| More than 3 months and up to 6 months                | 62 (6.2)       | 44 (8.6)          | 0.674     | 0.447 - 1.015  | 0.0577*  |
| More than 6 months and up to 12 months               | 50 (5.0)       | 30 (5.8)          | 0.797     | 0.497 - 1.278  | 0.3459   |
| More than 12 months                                  | 31 (3.1)       | 18 (3.5)          | 0.824     | 0.454 - 1.495  | 0.5230   |

|  |            |            |           |               |         |
|--|------------|------------|-----------|---------------|---------|
| I'm not sure                               | 108 (10.8) | 30 (5.8)   | -         | -             | -       |
| Dosage of vitamin D drops as a baby?       |            |            |           |               |         |
| No Vitamin D drops                         | 641 (64.0) | 308 (59.9) | Reference |               | -       |
| Less than the standard dose                | 12 (1.2)   | 17 (3.3)   | 0.339     | 0.160 - 0.719 | 0.0032* |
| About the standard dose                    | 220 (22.0) | 149 (29.0) | 0.710     | 0.553 - 0.910 | 0.0066* |
| More than the standard dose                | 7 (0.7)    | 5 (1.0)    | 0.673     | 0.212 - 2.137 | 0.4986  |
| I'm not sure                               | 121 (12.1) | 35 (6.8)   | -         | -             | -       |
| Prenatal folate supplementation?           |            |            |           |               |         |
| Yes, for entire or nearly entire pregnancy | 788 (78.7) | 421 (81.9) | 0.884     | 0.578 - 1.352 | 0.5688  |
| Yes, during the first trimester            | 55 (5.5)   | 29 (5.6)   | 0.896     | 0.488 - 1.644 | 0.7218  |
| Yes, after the first trimester             | 45 (4.5)   | 15 (2.9)   | 1.417     | 0.695 - 2.889 | 0.3370  |
| No   | 72 (7.2)   | 34 (6.6)   | Reference |               | -       |
| I'm not sure                               | 41 (4.1)   | 15 (2.9)   | -         | -             | -       |

Notes: <sup>a</sup> Questions in this table were edited for brevity. \*p-values <0.05.  
Abbreviations: OR, Wald odds ratio; 95% CI, 95% Wald confidence interval.

**Table S5** Correlation matrix n<sup>a</sup> per variable pair

| Variable       | ASD  | Breastfeed | Antibiotic | Ear infection | Acetaminophen | Ibuprofen | Vitamin D drop | Folate |
|----------------|------|------------|------------|---------------|---------------|-----------|----------------|--------|
| ASD            | 1515 |            |            |               |               |           |                |        |
| Breastfeed     | 1515 | 1515       |            |               |               |           |                |        |
| Antibiotic     | 1413 | 1413       | 1413       |               |               |           |                |        |
| Ear infection  | 1479 | 1479       | 1392       | 1479          |               |           |                |        |
| Acetaminophen  | 1286 | 1286       | 1252       | 1266          | 1286          |           |                |        |
| Ibuprofen      | 1280 | 1280       | 1245       | 1260          | 1259          | 1280      |                |        |
| Vitamin D drop | 1330 | 1330       | 1244       | 1297          | 1138          | 1133      | 1330           |        |
| Folate         | 1459 | 1459       | 1365       | 1428          | 1242          | 1237      | 1276           | 1459   |

Note: <sup>a</sup> n from Pearson correlations.

**Table S6** Correlation matrix p-value<sup>a</sup> per variable pair

| Variable       | ASD     | Breastfeed | Antibiotic | Ear infection | Acetaminophen | Ibuprofen | Vitamin D drop | Folate |
|----------------|---------|------------|------------|---------------|---------------|-----------|----------------|--------|
| ASD            |         |            |            |               |               |           |                |        |
| Breastfeed     | <0.001* |            |            |               |               |           |                |        |
| Antibiotic     | <0.001* | <0.001*    |            |               |               |           |                |        |
| Ear infection  | <0.001* | <0.001*    | <0.001*    |               |               |           |                |        |
| Acetaminophen  | 0.016*  | 0.013*     | <0.001*    | <0.001*       |               |           |                |        |
| Ibuprofen      | 0.208   | 0.432      | <0.001*    | <0.001*       | <0.001*       |           |                |        |
| Vitamin D drop | 0.131   | <0.001*    | 0.242      | 0.001*        | 0.773         | 0.436     |                |        |
| Folate         | 0.177   | 0.059      | 0.673      | 0.350         | 0.641         | 0.409     | 0.002*         |        |

Note: <sup>a</sup> p values from Pearson correlations. \*p-values <0.05.

**Table S7** aORs without gender as a covariate

| Variable                        | aOR <sup>a</sup> | 95% CI        | p-value  |
|---------------------------------|------------------|---------------|----------|
| Breastfeeding (months)          | 0.951            | 0.935 - 0.967 | <0.0001* |
| Antibiotic (courses)            | 1.116            | 1.059 - 1.180 | 0.0001*  |
| Ear infection (#)               | 1.179            | 1.089 - 1.278 | 0.0001*  |
| Acetaminophen (doses)           | 1.019            | 1.005 - 1.034 | 0.0094*  |
| Ibuprofen (doses)               | 1.014            | 1.000 - 1.029 | 0.0528   |
| Vitamin D drops (months x dose) | 1.013            | 0.987 - 1.041 | 0.3451   |
| Folate first trimester (binary) | 1.081            | 0.730 - 1.584 | 0.6945   |

Notes: <sup>a</sup> Covariates for aORs are: age of the child, ethnicity, Midwest, South, maternal education, age of mother birth of child, and relationship; \*p-values <0.05.

Abbreviations: aOR, adjusted odds ratio; 95% CI, 95% confidence interval.

**Table S8** Specialized general linear models without gender as a covariate

| Model   | n     | Variable                        | aOR <sup>a</sup> | 95% CI        | p-value  |
|---|-------|---------------------------------|------------------|---------------|----------|
| Antibiotic / Ear infection                              | 1,388 | Antibiotic (courses)            | 1.072            | 1.004 - 1.150 | 0.0449*  |
|   |       | Ear Infection (#)               | 1.103            | 0.990 - 1.228 | 0.0754   |
| Low granularity antibiotic / Ear infection              | 1,388 | Low gran antibiotic (courses)   | 1.161            | 1.017 - 1.329 | 0.0287*  |
|   |       | Ear Infection (#)               | 1.061            | 0.933 - 1.208 | 0.3653   |
| Analgesic   | 1,257 | Acetaminophen (doses)           | 1.019            | 1.000 - 1.039 | 0.0584   |
|   |       | Ibuprofen (doses)               | 1.001            | 0.981 - 1.021 | 0.8996   |
| Breastfeeding / Vitamin D drops                         | 1,327 | Breastfeeding (months)          | 0.950            | 0.932 - 0.967 | <0.0001* |
|   |       | Vit D drop (months X dose)      | 1.031            | 1.003 - 1.061 | 0.0326*  |
| Breastfeeding / Vitamin D drops excluding > 1 ASD child | 1,208 | Breastfeeding (months)          | 0.952            | 0.934 - 0.971 | <0.0001* |
|   |       | Vit D drop (months X dose)      | 1.031            | 1.002 - 1.061 | 0.0400*  |
| Breastfeeding / Total Vitamin D                         | 1,327 | Breastfeeding (months)          | 0.969            | 0.947 - 0.991 | 0.0051*  |
|   |       | Total oral D (norm dose)        | 1.741            | 1.060 - 2.905 | 0.0307*  |
| Folate including genetic conditions                     | 1,505 | Folate first trimester (binary) | 1.097            | 0.743 - 1.604 | 0.6351   |

Notes: <sup>a</sup> Covariates for aORs are: age of the child, ethnicity, Midwest, South, maternal education, age of mother at birth of child, and relationship. \*p-values <0.05.

Abbreviations: Vit, Vitamin; gran, granularity; norm, normalized; aOR, adjusted odds ratio; 95% CI, 95% confidence interval.