**sTable 1. Distribution of Risk Factors in Children With vs. Without Vectorial Aniso-Total Astigmatism**

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| **Risk Factors** | **Group A (N=44)** | **Group B (N=1087)** | ***P*-value** |
| Mean (± SD) age (month) | 67.07 ± 2.99 | 66.89 ± 3.40 | 0.05 |
| Gender: male (%) | 22 (50%) | 581 (53.45%) | 0.77 |
| Mean (± SD) paternal age at child birth (year) | 26.91 ± 3.78 | 27.83 ± 4.84 | 0.24 |
| Mean (± SD) maternal age at child birth (year) | 25.75 ± 3.13 | 26.15 ± 3.96 | 0.21 |
| Paternal myopia: yes (%) | 16 (36.36%) | 389 (35.79%) | 0.94 |
| Maternal myopia: yes (%) | 23(52.27%) | 426(39.19%) | 0.09 |
| Parental astigmatism: yes (%) | 18 (40.91%) | 270 (24.84%) | 0.03 |
| Mode of pregnancy: assisted (%) | 5 (11.36%) | 182 (16.74%) | 0.46 |
| Term delivery |  |  | 0.07 |
| Full-term | 40 (90.91%) | 979 (90.06%) |  |
| Pre-term | 4 (9.09%) | 55 (5.06%) |  |
| Post-term | 0 (0%) | 53 (4.88%) |  |
| Mean (± SD) birth weight (kilogram) | 3.19 ± 0.53 | 3.35 ± 0.52 | 0.76 |
| 5-min Apgar score: abnormal (%) | 7 (15.91%) | 30 (2.76%) | <0.001 |
| Delivery mode |  |  | 0.96 |
| Vaginal | 25 (56.82%) | 610 (56.12%) |  |
| Vaginal transferring to cesarean | 3 (6.82%) | 87 (8.00%) |  |
| Casarean | 16 (36.36%) | 390 (35.88%) |  |
| Oxygen uptake after birth: yes (%) | 6 (13.64%) | 63 (5.80%) | 0.07 |
| Second or third child: yes (%) | 6 (13.64%) | 213 (19.60%) | 0.43 |
| Twin or triple: yes (%) | 1 (2.27%) | 23 (2.12%) | 0.94 |
| Feeding patterns |  |  | 0.36 |
| Exclusive breastfeeding | 19 (43.18%) | 525 (48.30%) |  |
| Partial breastfeeding | 18 (40.91%) | 464 (42.69%) |  |
| Formula feeding | 7 (15.91%) | 98 (9.01%) |  |
| Second-hand smoke exposure during pregnancy: yes (%) | 9 (20.45%) | 148 (13.62%) | 0.29 |
| Maternal working during pregnancy: yes (%) | 19 (43.18%) | 505 (46.46%) | 0.79 |
| Mean (± SD) outdoor activity (hour) | 2.03 ± 0.78 | 2.25 ± 1.42 | 0.054 |
| Mean (± SD) mid-working distance activity (hour) | 4.69 ± 2.14 | 4.79 ± 3.53 | 0.59 |
| Mean (± SD) near-work activity (hour) | 1.21 ± 0.89 | 1.55 ± 1.68 | 0.25 |

Group A: children with vectorial aniso-total astigmatism; Group B:children with vectorial aniso-total astigmatism

**sTable 2. Distribution of Risk Factors in Children With vs. Without Vectorial Aniso-Corneal Astigmatism**

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| **Risk Factors** | **Group C (N=278)** | **Group D (N=873)** | ***P*-value** |
| Mean (± SD) age (month) | 66.85 ± 3.38 | 66.91 ± 3.39 | 0.98 |
| Gender: male (%) | 135 (48.56%) | 468 (42.20%) | 0.08 |
| Mean (± SD) paternal age at child birth (year) | 28.00 ± 4.40 | 27.73 ± 4.93 | 0.047 |
| Mean (± SD) maternal age at child birth (year) | 26.20 ± 3.55 | 26.12 ± 4.05 | 0.15 |
| Paternal myopia: yes (%) | 99 (35.61%) | 306 (35.87%) | 0.99 |
| Maternal myopia: yes (%) | 108 (38.85%) | 341 (39.98%) | 0.79 |
| Parental astigmatism: yes (%) | 76 (27.34%) | 212 (24.85%) | 0.46 |
| Mode of pregnancy: assisted (%) | 53 (19.06%) | 134 (15.71%) | 0.22 |
| Term delivery |  |  | 0.01 |
| Full-term | 252 (90.65%) | 767 (89.92%) |  |
| Pre-term | 20 (7.19%) | 39 (4.57%) |  |
| Post-term | 6 (2.16%) | 47 (5.51%) |  |
| Mean (± SD) birth weight (kilogram) | 3.29 ± 0.56 | 3.36 ± 0.50 | 0.33 |
| 5-min Apgar score: abnormal (%) | 13 (4.68%) | 24 (2.81%) | 0.19 |
| Delivery mode |  |  | 0.39 |
| Vaginal | 157 (56.47%) | 478 (56.04%) |  |
| Vaginal transferring to cesarean | 17 (6.12%) | 73 (8.56%) |  |
| Casarean | 104 (37.41%) | 302 (35.40) |  |
| Oxygen uptake after birth: yes (%) | 22 (7.91%) | 47 (5.51%) | 0.19 |
| Second or third child: yes (%) | 52 (18.70%) | 167 (19.58%) | 0.82 |
| Twin or triple: yes (%) | 11 (3.96%) | 13 (1.52%) | 0.03 |
| Feeding patterns |  |  | 0.28 |
| Exclusive breastfeeding | 124 (44.60%) | 420 (49.24%) |  |
| Partial breastfeeding | 130 (46.76%) | 352 (41.27%) |  |
| Formula feeding | 24 (8.63%) | 81 (9.50%) |  |
| Second-hand smoke exposure during pregnancy: yes (%) | 39 (14.03%) | 118 (13.83%) | 0.94 |
| Maternal working during pregnancy: yes (%) | 129 (46.40%) | 395 (46.31%) | 0.98 |
| Mean (± SD) outdoor activity (hour) | 2.32 ± 1.71 | 2.21 ± 1.28 | 0.03 |
| Mean (± SD) mid-working distance activity (hour) | 4.97 ± 4.10 | 4.73 ± 3.25 | 0.88 |
| Mean (± SD) near-work activity (hour) | 1.48 ± 1.83 | 1.55 ± 1.60 | 0.98 |

Group C: children with vectorial aniso-corneal astigmatism; Group D:children with vectorial aniso-corneal astigmatism

**sTable 3. Distribution of Risk Factors in Children With vs. Without Vectorial Aniso-Residual Astigmatism.**

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| **Risk Factors** | **Group E (N=273)** | **Group F (N=858)** | ***P*-value** |
| Mean (± SD) age (month) | 66.73 ± 3.37 | 66.95 ± 3.39 | 0.74 |
| Gender: male (%) | 140 (51.28%) | 463 (53.96%) | 0.48 |
| Mean (± SD) paternal age at child birth (year) | 27.79 ± 4.58 | 27.80 ± 4.87 | 0.45 |
| Mean (± SD) maternal age at child birth (year) | 26.13 ± 3.68 | 26.15 ± 4.00 | 0.50 |
| Paternal myopia: yes (%) | 94 (34.43%) | 311 (36.25%) | 0.64 |
| Maternal myopia: yes (%) | 107 (39.19%) | 342 (39.86%) | 0.90 |
| Parental astigmatism: yes (%) | 74 (27.11%) | 214 (24.94%) | 0.53 |
| Mode of pregnancy: assisted (%) | 49 (17.95%) | 138 (16.08%) | 0.53 |
| Term delivery |  |  | 0.19 |
| Full-term | 248 (90.84%) | 771 (89.86%) |  |
| Pre-term | 17 (6.23%) | 42 (4.90%) |  |
| Post-term | 8 (2.93%) | 45 (5.24%) |  |
| Mean (± SD) birth weight (kilogram) | 3.33 ± 0.53 | 3.34 ± 0.51 | 0.83 |
| 5-min Apgar score: abnormal (%) | 12 (4.40%) | 25 (2.91%) | 0.32 |
| Delivery mode |  |  | 0.58 |
| Vaginal | 146 (53.48%) | 489 (56.99%) |  |
| Vaginal transferring to cesarean | 24 (8.79%) | 66 (7.70%) |  |
| Casarean | 103 (37.73%) | 303 (35.31%) |  |
| Oxygen uptake after birth: yes (%) | 20 (7.33%) | 49 (5.71%) | 0.41 |
| Second or third child: yes (%) | 49 (17.95%) | 170 (19.81%) | 0.55 |
| Twin or triple: yes (%) | 6 (2.20%) | 18 (2.10%) | 0.92 |
| Feeding patterns |  |  | 0.69 |
| Exclusive breastfeeding | 131 (47.99%) | 413 (48.14%) |  |
| Partial breastfeeding | 120 (43.96%) | 120 (13.99%) |  |
| Formula feeding | 22 (8.06%) | 22 (2.56%) |  |
| Second-hand smoke exposure during pregnancy: yes (%) | 40 (14.65%) | 117 (13.64%) | 0.75 |
| Maternal working during pregnancy: yes (%) | 131 (47.99%) | 393 (45.80%) | 0.58 |
| Mean (± SD) outdoor activity (hour) | 2.22 ± 1.39 | 2.25 ± 1.40 | 0.94 |
| Mean (± SD) mid-working distance activity (hour) | 4.96 ± 4.51 | 4.73 ± 3.09 | 0.27 |
| Mean (± SD) near-work activity (hour) | 1.60 ± 2.30 | 1.51 ± 1.40 | 0.11 |

Group E: children with vectorial aniso-residual astigmatism; Group F:children with vectorial aniso-residual astigmatism

**sTable 4. Distribution of Risk Factors in Children With vs. Without Non-Vectorial Aniso-Total Astigmatism**

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| **Risk Factors** | **Group G (N=22)** | **Group H (N=1109)** | ***P*-value** |
| Mean (± SD) age (month) | 66.50 ± 2.92 | 66.91 ± 3.40 | 0.15 |
| Gender: male (%) | 13 (59.09%) | 590 (53.20) | 0.74 |
| Mean (± SD) paternal age at child birth (year) | 26.91 ± 2.72 | 27.82 ± 4.83 | 0.05 |
| Mean (± SD) maternal age at child birth (year) | 25.77 ± 3.10 | 26.15 ± 3.95 | 0.51 |
| Paternal myopia: yes (%) | 10 (45.45%) | 395 (35.62%) | 0.47 |
| Maternal myopia: yes (%) | 11 (50.00%) | 438 (39.50%) | 0.44 |
| Parental astigmatism: yes (%) | 9 (40.91%) | 279 (25.16%) | 0.15 |
| Mode of pregnancy: assisted (%) | 7 (31.82%) | 180 (16.23%) | 0.10 |
| Term delivery |  |  | 0.99 |
| Full-term | 20 (90.90%) | 999 (90.08%) |  |
| Pre-term | 1 (4.55%) | 58 (5.23%) |  |
| Post-term | 1 (4.55%) | 52 (4.69%) |  |
| Mean (± SD) birth weight (kilogram) | 3.39 ± 0.43 | 3.34 ± 0.52 | 0.34 |
| 5-min Apgar score: abnormal (%) | 3 (13.64%) | 34 (3.07%) | 0.03 |
| Delivery mode |  |  | 0.16 |
| Vaginal | 8 (36.36%) | 627 (56.54%) |  |
| Vaginal transferring to cesarean | 3 (13.64%) | 87 (7.84%) |  |
| Casarean | 11 (50.00%) | 395 (35.62%) |  |
| Oxygen uptake after birth: yes (%) | 3 (13.64%) | 66 (5.95%) | 0.30 |
| Second or third child: yes (%) | 2 (9.09%) | 217 (19.57%) | 0.33 |
| Twin or triple: yes (%) | 1 (4.55%) | 23 (2.07%) | 0.96 |
| Feeding patterns |  |  | 0.33 |
| Exclusive breastfeeding | 8 (36.36%) | 536 (48.33%) |  |
| Partial breastfeeding | 10 (45.46%) | 472 (42.56%) |  |
| Formula feeding | 4 (18.18%) | 101 (9.11%) |  |
| Second-hand smoke exposure during pregnancy: yes (%) | 2 (9.09%) | 155 (13.98%) | 0.73 |
| Maternal working during pregnancy: yes (%) | 11 (50.00%) | 513 (46.26%) | 0.89 |
| Mean (± SD) outdoor activity (hour) | 1.82 ± 0.63 | 2.25 ± 1.41 | 0.07 |
| Mean (± SD) mid-working distance activity (hour) | 4.47 ± 1.90 | 4.80 ± 3.51 | 0.35 |
| Mean (± SD) near-work activity (hour) | 1.29 ± 0.85 | 1.54 ± 1.67 | 0.32 |

Group G: children with non-vectorial aniso-total astigmatism; Group H:children with non-vectorial aniso-total astigmatism