

Title: Advancement in Human Face Prediction Using DNA

Supplementary Materials:

Table S1: Summary of data obtained from NHGRI-EBI GWAS Catalog for SNPs that met the genome-wide significance p -value threshold of (5×10^{-8}) for the face region, which include traits affecting multiple face areas. RAF = risk allele frequency. OR = Odd ratio. CI = Confidence interval. NR: Not reported [168], [165], [154].

| Reported Trait | Variant and risk allele | Mapped gene | Location | Minor Allele | RAF | OR | Beta | CI | P-value | Reference |
|--------------------------|-------------------------|--------------------------|-----------------------|--------------|------|----|----------------------|---------------|----------|-----------|
| Facial width measurement | rs118034464 | <i>LINC02151</i> | 11:116484935 | C | 0.01 | NR | 0.7961 unit increase | [0.47-1.12] | 3.00E-17 | [165] |
| | rs137985742 | <i>TUBA1C</i> | 12:49226772 | C | 0.31 | NR | 0.1529 unit increase | [0.088-0.218] | 4.00E-17 | [165] |
| | rs8003054 | <i>OSGEP, KLHL33</i> | 14:20439279 | G | 0.36 | NR | 0.1612 unit increase | [0.1-0.22] | 6.00E-17 | [165] |
| | rs17228178 | <i>TRPM1, LINC02352</i> | 15:31177725 | T | 0.28 | NR | 0.1619 unit increase | [0.097-0.227] | 7.00E-17 | [165] |
| | rs11073464 | <i>NR2F2-AS1</i> | 15:96128740 | G | 0.30 | NR | 0.1736 unit decrease | [0.11-0.24] | 7.00E-17 | [165] |
| | rs148442614 | <i>RPS9, TSEN34</i> | 19:54196103 | T | 0.01 | NR | 0.67 unit decrease | [0.39-0.95] | 1.00E-16 | [165] |
| | rs374193423 | <i>LINC00607</i> | 2:215658950 | C | 0.30 | NR | 0.1794 unit increase | [0.11-0.24] | 1.00E-16 | [165] |
| | rs1108585 | <i>PLXND1</i> | 3:129601685 | A | 0.09 | NR | 0.2362 unit increase | [0.14-0.34] | 5.00E-16 | [165] |
| | rs62328032 | <i>NR</i> | 4:156411459 | T | 0.05 | NR | 0.3212 unit decrease | [0.19-0.46] | 1.00E-15 | [165] |
| | rs66754540 | <i>DCTD, TENM3</i> | 4:182826850 | A | 0.11 | NR | 0.2291 unit increase | [0.13-0.33] | 2.00E-15 | [165] |
| | rs6880635 | <i>RASGRF2</i> | 5:80978080 | T | 0.01 | NR | 0.8464 unit decrease | [0.49-1.21] | 2.00E-15 | [165] |
| | rs181878063 | <i>LINC01470, PRKAA1</i> | 5:152572320 | C | 0.06 | NR | 0.3102 unit increase | [0.18-0.44] | 2.00E-15 | [165] |
| | rs6579967 | <i>LINC01470</i> | 5:152785450 | G | 0.06 | NR | 0.2979 unit increase | [0.18-0.42] | 3.00E-15 | [165] |
| | rs58248207 | <i>DNAJC5B</i> | 8:65987353 | AT | 0.15 | NR | 0.2018 unit increase | [0.12-0.29] | 3.00E-15 | [165] |
| | rs6064603 | <i>LINC01742</i> | 20:57983390 | A | 0.02 | NR | 0.5209 unit decrease | [0.3-0.74] | 3.00E-15 | [165] |
| | rs4440965 | <i>LINC01435</i> | 10:107761992 | G | 0.43 | NR | 0.1443 unit increase | [0.084-0.205] | 3.00E-15 | [165] |
| | rs2971996 | <i>DISP1</i> | 1:222936592 | G | 0.16 | NR | 0.1896 unit decrease | [0.11-0.27] | 4.00E-15 | [165] |
| | rs373711932 | <i>CDK13, RN7SL496P</i> | 7:39928927 | C | 0.42 | NR | 0.1413 unit decrease | [0.082-0.2] | 4.00E-15 | [165] |
| | rs5767180 | <i>TAF45</i> | 22:48513656 | A | 0.01 | NR | 0.7425 unit increase | [0.45-1.03] | 7.00E-15 | [165] |
| | rs79756450 | <i>LINC02683, SPON1</i> | 11:13953912 | C | 0.04 | NR | 0.3914 unit increase | [0.24-0.54] | 8.00E-15 | [165] |
| | rs1853554 | <i>KRT18P14, TRIM44</i> | 11:35842422 | A | 0.23 | NR | 0.1711 unit decrease | [0.099-0.243] | 9.00E-15 | [165] |
| | 9:90659999 | <i>NR</i> | Mapping not available | C | 0.03 | NR | 0.4114 unit decrease | [0.24-0.58] | 1.00E-14 | [165] |
| Cranial base width | rs117137044 | <i>RNU6-273P, MIPOL1</i> | 14:37190997 | A | 0.11 | NR | 1.058 unit decrease | [0.66-1.46] | 1.00E-14 | [154] |
| | rs55995849 | <i>MIPOL1</i> | 14:37313885 | A | 0.11 | NR | 1.083 unit decrease | [0.68-1.48] | 1.00E-14 | [154] |

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|--|-------------|--------------------------|-----------------------|------|------|----|----------------------|---------------|----------|-------|
| Factor 4, facial height related to vertical position of gnathion | rs17106852 | <i>FOXA1, MIPOL1</i> | 14:37569263 | G | 0.11 | NR | 1.104 unit decrease | [0.7-1.51] | 1.00E-14 | [154] |
| | rs6129564 | <i>NR</i> | 20:40275563 | A | 0.12 | NR | 1.21 unit decrease | [0.83-1.59] | 1.00E-14 | [154] |
| | rs74513917 | <i>NR</i> | 14:42455609 | T | 0.01 | NR | 0.7445 unit increase | [0.46-1.03] | 1.00E-12 | [165] |
| | rs7432532 | <i>SCN5A</i> | 3:38587170 | C | 0.10 | NR | 0.2484 unit increase | [0.15-0.35] | 1.00E-12 | [165] |
| | rs140662893 | <i>GSK3B</i> | 3:119861520 | C | 0.01 | NR | 0.7781 unit decrease | [0.45-1.1] | 1.00E-12 | [165] |
| | rs73249112 | <i>SLC7A5, KLHDC4</i> | 16:87794485 | T | 0.04 | NR | 0.3556 unit decrease | [0.21-0.5] | 2.00E-12 | [165] |
| | rs79032298 | <i>MEF2C, MEF2C-AS2</i> | 5:88741557 | A | 0.02 | NR | 0.4646 unit decrease | [0.28-0.65] | 2.00E-12 | [165] |
| | rs181974282 | <i>NR</i> | 5:155134628 | G | 0.01 | NR | 0.7107 unit increase | [0.42-1] | 2.00E-12 | [165] |
| | rs76643455 | <i>TMEM132E</i> | 17:34665500 | T | 0.06 | NR | 0.301 unit decrease | [0.18-0.43] | 2.00E-12 | [165] |
| | rs148770887 | <i>Y_RNA, MED13</i> | 17:62111981 | A | 0.02 | NR | 0.5393 unit decrease | [0.31-0.76] | 2.00E-12 | [165] |
| | 17:60407631 | <i>NR</i> | Mapping not available | C | 0.01 | NR | 0.6929 unit decrease | [0.43-0.95] | 3.00E-12 | [165] |
| | 18:48657066 | <i>NR</i> | Mapping not available | A | 0.12 | NR | 0.2195 unit decrease | [0.13-0.31] | 3.00E-12 | [165] |
| | rs148380447 | <i>TERF1, KCNB2</i> | 8:72951519 | C | 0.01 | NR | 0.8221 unit decrease | [0.49-1.16] | 3.00E-12 | [165] |
| | rs118125078 | <i>REFX3</i> | 9:3227730 | T | 0.04 | NR | 0.381 unit decrease | [0.22-0.54] | 4.00E-12 | [165] |
| | rs7074498 | <i>FAM241B, MTND1P20</i> | 10:69615672 | T | 0.01 | NR | 0.7278 unit increase | [0.43-1.03] | 4.00E-12 | [165] |
| | rs59365945 | <i>DENND1B</i> | 1:197738021 | GCCT | 0.25 | NR | 0.1765 unit increase | [0.25-0.11] | 4.00E-12 | [165] |
| | rs149262213 | <i>SBSPON</i> | 8:73128248 | T | 0.01 | NR | 0.8337 unit increase | [1.18-0.49] | 5.00E-12 | [165] |
| | rs34949598 | <i>CRB1</i> | 1:197433061 | A | 0.22 | NR | 0.173 unit increase | [0.1-0.25] | 5.00E-12 | [165] |
| | rs114959389 | <i>RAB3GAP2</i> | 1:220208415 | C | 0.01 | NR | 0.7393 unit increase | [0.44-1.04] | 5.00E-12 | [165] |
| | rs55721405 | <i>RPS6P23, DOCK9-DT</i> | 13:99136174 | T | 0.02 | NR | 0.5292 unit increase | [0.31-0.75] | 6.00E-12 | [165] |
| | rs58783610 | <i>NR</i> | 2:57606812 | C | 0.21 | NR | 0.1734 unit decrease | [0.1-0.25] | 6.00E-12 | [165] |
| | rs12465185 | <i>NR</i> | 2:59860787 | G | 0.07 | NR | 0.3052 unit decrease | [0.19-0.42] | 6.00E-12 | [165] |
| Factor 9, facial height related to vertical position of nasion | rs150688177 | <i>NR</i> | 13:55478374 | G | 0.01 | NR | 0.6895 unit decrease | [0.4-0.97] | 1.00E-13 | [165] |
| | rs192381057 | <i>DAOA-AS1</i> | 13:105498801 | A | 0.01 | NR | 0.8382 unit increase | [0.49-1.19] | 1.00E-13 | [165] |
| | rs112511609 | <i>CCDC33</i> | 15:74226743 | A | 0.02 | NR | 0.5299 unit increase | [0.3-0.75] | 1.00E-13 | [165] |
| | rs62096916 | <i>HMGNI31</i> | 18:60776897 | A | 0.10 | NR | 0.2395 unit increase | [0.14-0.34] | 1.00E-13 | [165] |
| | rs191281700 | <i>ZNF28</i> | 19:52828179 | A | 0.01 | NR | 0.8081 unit increase | [0.47-1.15] | 1.00E-13 | [165] |
| | rs75352580 | <i>ADGRL4</i> | 1:79090306 | A | 0.03 | NR | 0.4347 unit increase | [0.26-0.61] | 2.00E-13 | [165] |
| | rs340502 | <i>LINC01833, CAMKMT</i> | 2:44853940 | A | 0.34 | NR | 0.1514 unit decrease | [0.089-0.214] | 2.00E-13 | [165] |

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|--|----------------|-------------------------|-----------------------|----|------|----|----------------------|---------------|----------|-------|
| | exm246260 | NR | Mapping not available | G | 0.02 | NR | 0.5866 unit increase | [0.37-0.81] | 2.00E-13 | [165] |
| | rs144308062 | <i>TTN, TTN-AS1</i> | 2:178737681 | C | 0.02 | NR | 0.5503 unit increase | [0.34-0.76] | 3.00E-13 | [165] |
| | rs79124480 | <i>TENM3</i> | 4:182345662 | G | 0.01 | NR | 0.7048 unit decrease | [0.4-1.01] | 3.00E-13 | [165] |
| | rs7378943 | <i>KIAA0825</i> | 5:94212587 | G | 0.09 | NR | 0.2579 unit decrease | [0.15-0.36] | 3.00E-13 | [165] |
| | rs6580110 | <i>MIR1303, Y_RNA</i> | 5:154697614 | G | 0.32 | NR | 0.1528 unit decrease | [0.088-0.217] | 4.00E-13 | [165] |
| | rs9456748 | <i>PRKN</i> | 6:162168986 | G | 0.44 | NR | 0.1651 unit increase | [0.11-0.22] | 6.00E-13 | [165] |
| | rs10253066 | <i>TAS2R2P, SCIN</i> | 7:12535647 | C | 0.47 | NR | 0.1428 unit decrease | [0.083-0.203] | 6.00E-13 | [165] |
| | rs10959228 | <i>RPS27AP14, DMRT2</i> | 9:1077149 | A | 0.35 | NR | 0.1567 unit increase | [0.094-0.219] | 7.00E-13 | [165] |
| | rs10965534 | <i>CCDC187</i> | 9:22953630 | T | 0.03 | NR | 0.4161 unit decrease | [0.25-0.59] | 7.00E-13 | [165] |
| | rs143168415 | NR | 21:16878888 | A | 0.01 | NR | 0.8276 unit decrease | [0.47-1.18] | 8.00E-13 | [165] |
| | rs73209858 | <i>BRWD1</i> | 21:39285897 | C | 0.01 | NR | 0.7312 unit increase | [0.42-1.04] | 9.00E-13 | [165] |
| | rs7917878 | <i>LINC02647</i> | 10:85394782 | T | 0.11 | NR | 0.2358 unit increase | [0.14-0.33] | 1.00E-12 | [165] |
| Lower facial height | rs17649135 | <i>RPL31P53</i> | 13:57420576 | A | 0.03 | NR | 1.428 unit increase | [0.82-2.03] | 9.00E-14 | [154] |
| | rs68151129 | <i>GPC6</i> | 13:94331191 | T | 0.12 | NR | 0.7802 unit increase | [0.47-1.09] | 9.00E-14 | [154] |
| | rs58761416 | <i>LINC02834</i> | 9:86757154 | CT | 0.24 | NR | 1.34 unit increase | [0.74-1.94] | 1.00E-29 | [154] |
| | rs227726 | <i>C17orf67</i> | 17:56700224 | T | 0.34 | NR | 1.242 unit decrease | [0.7-1.79] | 3.00E-29 | [154] |
| Upper facial depth | chr1:100612063 | NR | Mapping not available | C | 0.06 | NR | 1.82 unit decrease | [0.94-2.7] | 3.00E-36 | [154] |
| | rs12786942 | <i>TRPC6</i> | 11:101524034 | T | 0.12 | NR | 1.429 unit decrease | [0.81-2.05] | 2.00E-34 | [154] |
| Middle facial depth | rs12786942 | <i>TRPC6</i> | 11:101524034 | T | 0.12 | NR | 1.512 unit decrease | [0.87-2.15] | 8.00E-34 | [154] |
| | rs17228178 | <i>TRPM1, LINC02352</i> | 15:31177725 | T | 0.28 | NR | 1.215 unit increase | [0.76-1.67] | 6.00E-32 | [154] |
| | rs6005551 | <i>MN1</i> | 22:27657842 | T | 0.23 | NR | 0.9915 unit decrease | [0.5-1.48] | 8.00E-30 | [154] |
| Factor 13, vertical position of alar curvature relative to upper lip | rs35474939 | <i>KCNQ1</i> | 11:2503729 | T | 0.13 | NR | 0.2202 unit decrease | [0.13-0.31] | 8.00E-74 | [165] |
| | rs10893109 | <i>OR8D4, OR4D5</i> | 11:123933712 | C | 0.50 | NR | 0.1449 unit increase | [0.085-0.205] | 5.00E-68 | [165] |
| | rs118081607 | <i>LINC02873</i> | 11:130700896 | T | 0.01 | NR | 0.8048 unit increase | [0.48-1.13] | 6.00E-65 | [165] |
| | rs190597399 | <i>Y_RNA</i> | X:144191136 | A | 0.02 | NR | 0.4133 unit decrease | [0.24-0.59] | 7.00E-62 | [165] |
| | rs80062874 | <i>ANO4</i> | 12:100745094 | T | 0.02 | NR | 0.4987 unit increase | [0.29-0.7] | 8.00E-58 | [165] |
| | rs199814749 | <i>ZRANB2-AS2</i> | 1:71125502 | CT | 0.09 | NR | 0.2421 unit decrease | [0.14-0.34] | 5.00E-56 | [165] |
| | rs116133561 | <i>ZRANB2-AS2</i> | 1:71353465 | G | 0.06 | NR | 0.3097 unit decrease | [0.19-0.43] | 2.00E-51 | [165] |
| | rs5778766 | <i>PRDX6-AS1</i> | 1:173458993 | T | 0.32 | NR | 0.1582 unit increase | [0.096-0.221] | 9.00E-49 | [165] |
| | rs76210638 | <i>RFC3</i> | 13:33928046 | T | 0.09 | NR | 0.2521 unit decrease | [0.15-0.36] | 1.00E-46 | [165] |
| | rs17124581 | <i>SPATA7, KCNK10</i> | 14:88360338 | C | 0.06 | NR | 0.3132 unit increase | [0.19-0.44] | 1.00E-46 | [165] |

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|---|-------------|-----------------------|-------------|----|------|----|----------------------|--------------|----------|-------|
| Check morphology partial least square model | rs145969980 | <i>TLL13P, GDPGP1</i> | 15:90246301 | G | 0.01 | NR | 0.5928 unit increase | [0.35-0.168] | 3.00E-46 | [165] |
| | rs117548309 | <i>SUGCT</i> | 7:40703303 | G | 0.06 | NR | 0.3102 unit increase | [0.18-0.44] | 6.00E-45 | [165] |
| | rs60941879 | <i>FBN3</i> | 19:8069145 | T | 0.09 | NR | 0.252 unit increase | [0.15-0.36] | 6.00E-45 | [165] |
| | rs144211280 | <i>MEIS3</i> | 19:47410926 | T | 0.01 | NR | 0.8524 unit increase | [0.49-1.22] | 1.00E-38 | [165] |
| | rs6104460 | <i>CD40, RPL13P2</i> | 20:46100770 | T | 0.05 | NR | 0.3145 unit increase | [0.19-0.44] | 4.00E-37 | [165] |
| | rs72284640 | <i>DNA2</i> | 10:68441336 | T | 0.12 | NR | 0.2297 unit increase | [0.14-0.32] | 4.00E-37 | [165] |
| | rs17868256 | <i>CRYGGP</i> | 2:51805635 | NR | NR | NR | 0.0522 unit increase | NR | 8.00E-14 | [168] |

Table S2. Summary of data obtained from NHGRI-EBI GWAS Catalog for SNPs that met the genome-wide significance p -value threshold of (5×10^{-8}) for traits in the forehead region. RAF = risk allele frequency. OR = Odd ratio. CI = Confidence interval. NR: Not reported [146], [161], [163].

| Reported Trait | Variant and risk allele | Mapped gene | Location | Minor Allele | RAF | OR | Beta | CI | P-value | Reference |
|----------------------------|-------------------------|-------------------------|-------------|--------------|------|----|---------------------|----|----------|-----------|
| Forehead protrusion 1 | rs10948192 | <i>SUPT3H</i> | 6:44979584 | NR | NR | NR | NR | NR | 2.00E-14 | [161] |
| | rs7966340 | <i>HMGA2</i> | 12:65937585 | NR | NR | NR | NR | NR | 2.00E-14 | [161] |
| | rs8069947 | <i>SMG6</i> | 17:2082549 | NR | NR | NR | NR | NR | 3.00E-14 | [161] |
| segment 40 | rs77926594 | <i>CDH7</i> | 18:65799204 | NR | NR | NR | NR | NR | 7.00E-14 | [163] |
| segment 41 | rs58409393 | <i>ADAM15</i> | 1:155052831 | NR | NR | NR | NR | NR | 7.00E-14 | [163] |
| Upper forehead slant angle | rs216215 | <i>SMG6</i> | 17:2237374 | T | 0.42 | NR | 0.723 unit decrease | NR | 4.00E-14 | [146] |
| | rs363444 | <i>BACH1, GRIK1</i> | 21:29614128 | A | 0.19 | NR | 0.05 unit increase | NR | 5.00E-14 | [146] |
| Metopion eminence depth | rs3758477 | <i>FAM245A, MIR4678</i> | 10:87503615 | T | 0.35 | NR | 0.058 unit increase | NR | 5.00E-14 | [146] |
| | rs4283041 | <i>WNT5B, LINC00942</i> | 12:1528747 | T | 0.17 | NR | 0.073 unit decrease | NR | 6.00E-14 | [146] |
| Forehead height | rs10081631 | <i>RNU6-1035P</i> | 9:81776259 | C | 0.45 | NR | 0.676 unit increase | NR | 6.00E-14 | [146] |
| Brow ridge height | rs323187 | <i>CPVL</i> | 7:29111091 | G | 0.42 | NR | 0.32 unit decrease | NR | 6.00E-14 | [146] |

Table S3. Summary of data obtained from NHGRI-EBI GWAS Catalog for SNPs that met the genome-wide significance p -value threshold of (5×10^{-8}) for traits in the eye region. RAF = risk allele frequency. OR = Odd ratio. CI = Confidence interval. NR: Not reported [168], [146], [144]–[161], [163]–[154], [155].

| Reported trait | Variant and risk allele | Mapped gene | Location | Minor Allele | RAF | OR | Beta | CI | P-value | Reference |
|---|-------------------------|-----------------------------|--------------|--------------|------|----|----------------------|---------------|----------|-----------|
| Eye position 1 | rs17134499 | <i>SGO1P2, RN7SL292P</i> | 7:51764045 | NR | NR | NR | NR | NR | 5.00E-10 | [161] |
| Factor 14, inter-canthal width | rs139852892 | <i>LINC01643</i> | 22:34269045 | A | 0.01 | NR | 0.6596 unit decrease | NR | 2.00E-09 | [165] |
| | rs6624621 | <i>PHKA1</i> | X:72621579 | G | 0.39 | NR | 0.1379 unit increase | NR | 2.00E-09 | [165] |
| | rs799522 | <i>FRY</i> | 13:31939891 | T | 0.13 | NR | 0.2157 unit increase | NR | 2.00E-09 | [165] |
| | rs9530186 | <i>MARK2P12</i> | 13:73346327 | C | 0.24 | NR | 0.1912 unit decrease | NR | 2.00E-09 | [165] |
| | rs877426 | <i>RASA3</i> | 13:114068236 | T | 0.28 | NR | 0.1697 unit decrease | NR | 2.00E-09 | [165] |
| | rs74019792 | <i>Y_RNA, CFAP20</i> | 16:58108029 | A | 0.08 | NR | 0.2801 unit increase | NR | 2.00E-09 | [165] |
| | rs72794054 | <i>WWOX</i> | 16:78352046 | A | 0.04 | NR | 0.3947 unit decrease | NR | 2.00E-09 | [165] |
| | rs56053540 | NR | 16:82376611 | G | 0.11 | NR | 0.2166 unit decrease | NR | 2.00E-09 | [165] |
| | rs12456112 | <i>GNAL</i> | 18:11872893 | G | 0.03 | NR | 0.4391 unit increase | NR | 2.00E-09 | [165] |
| | rs3761026 | <i>ARHGAP45</i> | 19:1086044 | C | 0.47 | NR | 0.1488 unit decrease | NR | 3.00E-09 | [165] |
| | rs1706867 | NR | 2:2517476 | G | 0.46 | NR | 0.138 unit increase | NR | 3.00E-09 | [165] |
| | rs7673594 | <i>TRIML2, ZFP42</i> | 4:188023576 | T | 0.19 | NR | 0.1765 unit decrease | NR | 3.00E-09 | [165] |
| | rs5001173 | <i>MAPIB</i> | 5:72159447 | A | 0.27 | NR | 0.1566 unit decrease | NR | 3.00E-09 | [165] |
| | rs147675704 | NR | 5:121028860 | TG | 0.24 | NR | 0.1596 unit decrease | NR | 3.00E-09 | [165] |
| | rs148372137 | <i>RAB23, PRIM2</i> | 6:57273975 | T | 0.01 | NR | 0.6142 unit decrease | NR | 3.00E-09 | [165] |
| | rs17150689 | <i>ATXN7L1</i> | 7:105644232 | C | 0.01 | NR | 0.6177 unit increase | NR | 3.00E-09 | [165] |
| | rs55940216 | <i>NAT1, ASAH1</i> | 8:18125408 | G | 0.15 | NR | 0.2002 unit increase | [0.12-0.28] | 3.00E-09 | [165] |
| | rs79687921 | <i>FXN</i> | 9:69053515 | G | 0.43 | NR | 0.1435 unit increase | [0.085-0.202] | 3.00E-09 | [165] |
| | rs77783563 | <i>PFKP</i> | 10:3116281 | A | 0.03 | NR | 0.4409 unit decrease | [0.25-0.63] | 3.00E-09 | [165] |
| | rs138166088 | <i>PTER, LINC02654</i> | 10:16388195 | C | 0.01 | NR | 0.6929 unit increase | [0.4-0.99] | 3.00E-09 | [165] |
| | rs11093404 | <i>PABPC1L2A, PABPC1L2B</i> | X:73069628 | A | 0.24 | NR | 0.1745 unit increase | [0.11-0.23] | 4.00E-09 | [165] |
| Factor 2, vertical position of orbits relative to midface | rs16981003 | <i>MYO18B-AS1, MYO18B</i> | 22:25899066 | T | 0.03 | NR | 0.3912 unit increase | [0.23-0.55] | 8.00E-10 | [165] |
| | rs9615838 | <i>MIR3201</i> | 22:48238657 | T | 0.03 | NR | 0.3856 unit increase | [0.22-0.55] | 8.00E-10 | [165] |
| | rs78814167 | <i>CAPRN2, IPO8</i> | 12:30706035 | T | 0.02 | NR | 0.5471 unit decrease | [0.32-0.77] | 8.00E-10 | [165] |

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|--|-------------|----------------------------|-----------------------|-----|------|----|----------------------|---------------|----------|-------|
| | rs11629709 | <i>LINC00924</i> | 15:95409726 | G | 0.07 | NR | 0.2812 unit increase | [0.16-0.4] | 8.00E-10 | [165] |
| | rs74431973 | <i>NR</i> | 17:52260888 | A | 0.01 | NR | 0.6568 unit decrease | [0.39-0.92] | 8.00E-10 | [165] |
| | rs185881420 | <i>MAP2K6, LINC01633</i> | 17:69555786 | A | 0.01 | NR | 0.7534 unit decrease | [0.44-1.07] | 9.00E-10 | [165] |
| | rs12210772 | <i>RNU6ATAC21P</i> | 6:10270897 | A | 0.08 | NR | 0.2579 unit increase | [0.15-0.37] | 2.00E-09 | [165] |
| | rs9386051 | <i>PHACTR2, LTV1</i> | 6:143839143 | C | 0.34 | NR | 0.154 unit decrease | [0.092-0.216] | 2.00E-09 | [165] |
| | rs2727513 | <i>UBE2H, MIR183</i> | 7:129805371 | T | 0.27 | NR | 0.1564 unit increase | [0.09-0.223] | 2.00E-09 | [165] |
| | rs78305304 | <i>RP1</i> | 8:54611320 | G | 0.04 | NR | 0.3536 unit increase | [0.21-0.5] | 2.00E-09 | [165] |
| | rs118122713 | <i>FAM110B, C8orf89</i> | 8:58233210 | T | 0.01 | NR | 0.8324 unit increase | [0.48-1.18] | 2.00E-09 | [165] |
| | rs12003807 | <i>RXRA</i> | 9:134478893 | C | 0.02 | NR | 0.5843 unit increase | [0.34-0.82] | 2.00E-09 | [165] |
| | rs78643721 | <i>TLX1NB</i> | 10:101093461 | T | 0.03 | NR | 0.4196 unit increase | [0.25-0.59] | 2.00E-09 | [165] |
| | rs5787602 | <i>YWHAZP5</i> | 10:105699973 | T | 0.13 | NR | 0.2312 unit increase | [0.14-0.32] | 2.00E-09 | [165] |
| | rs199739975 | <i>FTLP10, TMPRSS11F</i> | 4:68140469 | T | 0.01 | NR | 0.6487 unit increase | [0.37-0.92] | 2.00E-09 | [165] |
| | rs35404815 | <i>ZFYVE27, SFRP5</i> | 10:97763490 | G | 0.11 | NR | 0.2209 unit decrease | [0.13-0.31] | 2.00E-09 | [165] |
| | rs78754071 | <i>ADAM5</i> | 8:39413302 | C | 0.04 | NR | 0.3635 unit increase | [0.22-0.51] | 1.00E-09 | [165] |
| Factor 8, orbital inclination due to vertical and horizontal position of exocanthion | rs113684415 | <i>RASEF</i> | 9:82890407 | T | 0.02 | NR | 0.5582 unit increase | [0.33-0.78] | 1.00E-09 | [165] |
| | rs12377833 | <i>BRINP1</i> | 9:119355455 | G | 0.29 | NR | 0.1565 unit decrease | [0.091-0.222] | 1.00E-09 | [165] |
| | rs370286690 | <i>FAM25E, WASHC2C</i> | 10:45793871 | C | 0.05 | NR | 0.3486 unit decrease | [0.21-0.49] | 1.00E-09 | [165] |
| | rs67832371 | <i>NR</i> | Mapping not available | CTT | 0.27 | NR | 0.163 unit decrease | [0.095-0.231] | 1.00E-09 | [165] |
| | rs1885364 | <i>MN1</i> | 22:27698847 | G | 0.49 | NR | 0.1501 unit increase | [0.091-0.209] | 1.00E-09 | [165] |
| | rs10459261 | <i>WIFI, LINC02389</i> | 12:64993845 | G | 0.07 | NR | 0.2664 unit decrease | [0.15-0.38] | 1.00E-09 | [165] |
| | rs9322905 | <i>AKAP6</i> | 14:32569655 | C | 0.40 | NR | 0.1526 unit increase | [0.091-0.214] | 1.00E-09 | [165] |
| | rs151121230 | <i>CGRRF1</i> | 14:54539032 | A | 0.02 | NR | 0.4661 unit increase | [0.27-0.66] | 1.00E-09 | [165] |
| | rs60260736 | <i>C17orf67</i> | 17:56701283 | A | 0.02 | NR | 0.5718 unit increase | [0.35-0.8] | 1.00E-09 | [165] |
| | 19:9933973 | <i>NR</i> | Mapping not available | T | 0.01 | NR | 0.7637 unit decrease | [0.47-1.06] | 1.00E-09 | [165] |
| | rs6709347 | <i>CRYGGP</i> | 2:51763821 | A | 0.16 | NR | 0.1954 unit increase | [0.11-0.28] | 2.00E-09 | [165] |
| | rs186934434 | <i>RN7SKP42, RNU6-989P</i> | 2:187210878 | A | 0.02 | NR | 0.5801 unit decrease | [0.34-0.82] | 2.00E-09 | [165] |
| | rs182151107 | <i>ULK4</i> | 3:41804959 | A | 0.01 | NR | 0.858 unit decrease | [0.5-1.22] | 2.00E-09 | [165] |
| | rs12512126 | <i>NR3C2</i> | 4:148285284 | G | 0.27 | NR | 0.1616 unit decrease | [0.096-0.227] | 2.00E-09 | [165] |
| | rs62367758 | <i>ZNF131</i> | 5:43110564 | A | 0.19 | NR | 0.2094 unit decrease | [0.13-0.29] | 2.00E-09 | [165] |
| | rs857418 | <i>RNU6-793P</i> | 6:14655800 | C | 0.02 | NR | 0.5076 unit increase | [0.29-0.72] | 2.00E-09 | [165] |

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|-------------------------------|-------------|-----------------------------|--------------|-------|------|----|----------------------|---------------|----------|-------|
| | rs151095285 | <i>ABCB4</i> | 7:87475134 | G | 0.01 | NR | 0.6942 unit increase | [0.4-0.99] | 2.00E-09 | [165] |
| | rs10241381 | <i>SDHAF3, DLX5</i> | 7:97035969 | G | 0.45 | NR | 0.1424 unit increase | [0.082-0.202] | 2.00E-09 | [165] |
| Segment 14 | rs80243479 | <i>TBX3, UBA52P7</i> | 12:114918878 | NR | NR | NR | NR | NR | 7.00E-09 | [163] |
| Segment 28 | rs113199279 | <i>TIFAB, NEUROG1</i> | 5:135470624 | NR | NR | NR | NR | NR | 7.00E-09 | [163] |
| Segment 59 | rs148390647 | <i>CLYBL</i> | 13:99890694 | NR | NR | NR | NR | NR | 7.00E-09 | [163] |
| Eye length | rs1868752 | <i>MIR100HG</i> | 11:122520734 | NR | NR | NR | 3.19 unit increase | NR | 6.00E-10 | [168] |
| Intercanthal width | rs619686 | <i>GSTM2</i> | 1:109676139 | G | 0.06 | NR | 0.7629 unit decrease | [0.44-1.08] | 9.00E-10 | [154] |
| | rs61852012 | <i>CDH23</i> | 10:71651356 | T | 0.13 | NR | 0.4484 unit decrease | [0.23-0.67] | 9.00E-10 | [154] |
| | rs11093404 | <i>PABPC1L2A, PABPC1L2B</i> | X:73069628 | A | 0.24 | NR | 0.4272 unit increase | [0.28-0.57] | 1.00E-09 | [154] |
| Outercanthal width | rs201983168 | <i>PRPF3</i> | 1:150342506 | TACAC | 0.33 | NR | 0.4915 unit decrease | [0.29-0.69] | 1.00E-09 | [154] |
| | rs3828785 | <i>HLA-DQB1</i> | 6:32661130 | A | 0.03 | NR | 1.449 unit decrease | [0.91-1.99] | 1.00E-09 | [154] |
| Left eye angle of en-ps | rs4742094 | <i>KANK1</i> | 9:560077 | G | 0.27 | NR | 0.519 unit increase | NR | 4.00E-09 | [146] |
| Left eye angle of ex-ps | rs2972180 | <i>CLN8, DLGAP2</i> | 8:1733567 | T | 0.18 | NR | 0.543 unit increase | NR | 4.00E-09 | [146] |
| Left eye angle of en-ps-ex | rs6994270 | <i>SAMD12</i> | 8:118336256 | G | 0.15 | NR | 1.007 unit decrease | NR | 4.00E-09 | [146] |
| | rs6016745 | <i>PTPRT</i> | 20:42321543 | A | 0.19 | NR | 0.803 unit decrease | NR | 4.00E-09 | [146] |
| Right eye tail length | rs970797 | <i>MTX2, RPSAP25</i> | 2:176247091 | A | 0.33 | NR | 0.236 unit increase | NR | 4.00E-09 | [146] |
| | rs3736712 | <i>WDR27</i> | 6:169557868 | C | 0.37 | NR | 0.293 unit increase | NR | 5.00E-09 | [146] |
| | rs8026249 | <i>THSD4</i> | 15:71648279 | T | 0.34 | NR | 0.23 unit increase | NR | 5.00E-09 | [146] |
| Left palpebral fissure height | rs12675712 | <i>SNTB1</i> | 8:120591250 | T | 0.16 | NR | 0.147 unit increase | NR | 5.00E-09 | [146] |
| | rs17231256 | <i>RPL23AP12, LINC01700</i> | 21:39076963 | T | 0.13 | NR | 0.17 unit decrease | NR | 5.00E-09 | [146] |
| Intercanthal width | rs7127228 | <i>LINC02725, DNAJB6P1</i> | 11:128032805 | A | 0.29 | NR | 0.301 unit decrease | NR | 5.00E-09 | [146] |
| Intercanthal width | rs1879682 | <i>LINC01899</i> | 18:71830005 | A | 0.47 | NR | 0.289 unit increase | NR | 5.00E-09 | [146] |
| Outercanthal width | rs8026249 | <i>THSD4</i> | 15:71648279 | T | 0.34 | NR | 0.525 unit increase | NR | 6.00E-09 | [146] |
| Eye morphology | rs12033305 | <i>TBX15, WARS2</i> | 1:119020916 | NR | NR | NR | NR | NR | 7.00E-09 | [160] |
| | rs12633011 | <i>MRPS22</i> | 3:139220153 | NR | NR | NR | NR | NR | 7.00E-09 | [160] |
| | rs970797 | <i>MTX2, RPSAP25</i> | 2:176247091 | NR | NR | NR | NR | NR | 7.00E-09 | [160] |

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|----------------------------------|------------|---------------------------|--------------|---|------|------|---------------------|-------------|----------|-------|
| Double-edged eyelids | rs12570134 | <i>EMX2OS</i> | 10:117524897 | T | 0.73 | 1.41 | NR | [1.3-1.54] | 7.00E-10 | [149] |
| | rs1415425 | <i>EMX2</i> | 10:117586415 | A | 0.52 | 1.23 | NR | [1.14-1.33] | 7.00E-10 | [149] |
| Tangent line angle of er4 | rs970797 | <i>MTX2, RPSAP25</i> | 2:176247091 | A | 0.33 | NR | 0.012 unit increase | NR | 4.00E-09 | [146] |
| | rs750688 | <i>IQCJ-SCHIP1</i> | 3:159640989 | A | 0.18 | NR | 0.013 unit decrease | NR | 4.00E-09 | [146] |
| Right eyelid peak position ratio | rs17032657 | <i>RERE</i> | 1:8536683 | G | 0.33 | NR | 0.006 unit decrease | NR | 4.00E-09 | [146] |
| | rs970797 | <i>MTX2, RPSAP25</i> | 2:176247091 | A | 0.33 | NR | 0.007 unit decrease | NR | 4.00E-09 | [146] |
| Left eyelid medial slant | rs4405545 | <i>PLCG2</i> | 16:81824567 | G | 0.09 | NR | 0.02 unit increase | NR | 4.00E-09 | [146] |
| Right eyelid medial slant | rs11209151 | <i>GNG12</i> | 1:67773251 | G | 0.11 | NR | 0.017 unit increase | NR | 4.00E-09 | [146] |
| Tangent line angle of el2 | rs7761214 | <i>MIR548A1HG</i> | 6:18588902 | A | 0.23 | NR | 0.01 unit increase | NR | 5.00E-09 | [146] |
| Tangent line angle of el3 | rs970797 | <i>MTX2, RPSAP25</i> | 2:176247091 | A | 0.33 | NR | 0.015 unit increase | NR | 6.00E-09 | [146] |
| | rs10750754 | <i>NR</i> | 11:106345783 | G | 0.36 | NR | 0.011 unit increase | NR | 6.00E-09 | [146] |
| | rs17032657 | <i>RERE</i> | 1:8536683 | G | 0.33 | NR | 0.013 unit increase | NR | 6.00E-09 | [146] |
| | rs970797 | <i>MTX2, RPSAP25</i> | 2:176247091 | A | 0.33 | NR | 0.015 unit increase | NR | 6.00E-09 | [146] |
| | rs2252421 | <i>LINC02651, RPL5P26</i> | 10:69768968 | G | 0.25 | NR | 0.013 unit decrease | NR | 6.00E-09 | [146] |
| Tangent line angle of el4 | rs970797 | <i>MTX2, RPSAP25</i> | 2:176247091 | A | 0.33 | NR | 0.011 unit increase | NR | 6.00E-09 | [146] |
| | rs10821147 | <i>FAM120A</i> | 9:93509085 | A | 0.50 | NR | 0.01 unit increase | NR | 6.00E-09 | [146] |
| | rs2000737 | <i>OR5BP1P, LRRC55</i> | 11:57119393 | C | 0.10 | NR | 0.017 unit increase | NR | 6.00E-09 | [146] |
| Tangent line angle of el6 | rs970797 | <i>MTX2, RPSAP25</i> | 2:176247091 | A | 0.33 | NR | 0.012 unit decrease | NR | 6.00E-09 | [146] |
| Upper eyelid sagging severity | rs2270588 | <i>TSPAN8</i> | 12:71132634 | C | 0.46 | NR | 0.12 unit decrease | NR | 3.00E-22 | [155] |
| | rs7602784 | <i>RNU4-73P, YWHAQ</i> | 2:9709268 | A | 0.28 | NR | 0.19 unit increase | NR | 3.00E-22 | [155] |
| | rs3769560 | <i>TTC27</i> | 2:32818790 | G | 0.39 | NR | 0.14 unit increase | NR | 5.00E-22 | [155] |
| | rs1515451 | <i>ZNF385D</i> | 3:21846679 | G | 0.46 | NR | 0.12 unit decrease | NR | 1.00E-21 | [155] |
| | rs1520818 | <i>SLAH2, ERICH6-AS1</i> | 3:150734758 | C | 0.12 | NR | 0.36 unit decrease | NR | 3.00E-21 | [155] |
| | rs4704521 | <i>LHFPL2, ARSB</i> | 5:78770808 | T | 0.35 | NR | 0.15 unit decrease | NR | 4.00E-21 | [155] |
| | rs7217473 | <i>CCL15-CCL14</i> | 17:35992028 | T | 0.05 | NR | 0.85 unit increase | NR | 9.00E-21 | [155] |
| | rs11876749 | <i>DLGAP1</i> | 18:3942902 | C | 0.47 | NR | 0.14 unit decrease | NR | 1.00E-20 | [155] |
| | rs10499596 | <i>SFRP4</i> | 7:38018725 | C | 0.09 | NR | 0.58 unit increase | NR | 2.00E-20 | [155] |
| | rs11808632 | <i>SMYD3</i> | 1:245831570 | T | 0.29 | NR | 0.07 unit increase | NR | 5.00E-20 | [155] |
| | rs6432188 | <i>LINC00570, PPIAP60</i> | 2:11358906 | T | 0.18 | NR | 0.09 unit increase | NR | 7.00E-20 | [155] |

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|------------|---------------------------|-------------|----|------|------|--------------------|-------------|----------|-------|
| rs6714226 | <i>RPSAP25, HOXD1</i> | 2:176212162 | T | 0.45 | NR | 0.07 unit increase | NR | 2.00E-19 | [155] |
| rs6447160 | <i>ATP8A1</i> | 4:42450204 | C | 0.06 | NR | 0.15 unit decrease | NR | 2.00E-19 | [155] |
| rs16854624 | <i>ATP8A1</i> | 4:42627021 | T | 0.07 | NR | 0.14 unit decrease | NR | 3.00E-19 | [155] |
| rs10077083 | <i>PJA2, CTNND2</i> | 5:109306871 | C | 0.03 | NR | 0.23 unit increase | NR | 4.00E-19 | [155] |
| rs12451218 | <i>COX10-AS1</i> | 17:13945915 | C | 0.41 | NR | 0.07 unit decrease | NR | 4.00E-19 | [155] |
| rs674017 | <i>TMEM135</i> | 11:87284616 | C | 0.06 | NR | 0.15 unit increase | NR | 6.00E-19 | [155] |
| rs17465658 | <i>LINC01362</i> | 1:83024478 | C | 0.22 | NR | 0.1 unit decrease | NR | 6.00E-19 | [155] |
| rs1356100 | <i>ZNF385D</i> | 3:21846985 | A | 0.49 | NR | 0.11 unit increase | NR | 7.00E-19 | [155] |
| rs4074869 | <i>MAGEF1, EPHB3</i> | 3:184613454 | G | 0.49 | NR | 0.12 unit decrease | NR | 9.00E-19 | [155] |
| rs4706522 | <i>KCNQ5</i> | 6:73020894 | A | 0.12 | NR | 0.11 unit increase | NR | 4.00E-18 | [155] |
| rs7239297 | <i>DLGAP1</i> | 18:3953220 | G | 0.49 | NR | 0.12 unit increase | NR | 4.00E-18 | [155] |
| rs16927253 | <i>MACROH2A2</i> | 10:70088678 | NR | NR | 4 | NR | [2.56-6.25] | 1.00E-17 | [144] |
| rs12599182 | <i>ADAMTS18</i> | 16:77422347 | NR | NR | 2.27 | NR | [1.64-3.03] | 2.00E-17 | [144] |
| rs4109293 | <i>LINC02636, COL13A1</i> | 10:69973565 | NR | NR | 2.38 | NR | [1.69-3.33] | 2.00E-17 | [144] |
| rs174213 | <i>ZFP36L1, MAGOH3P</i> | 14:68843795 | T | 0.33 | 1.6 | NR | [1.32-1.93] | 2.00E-17 | [144] |

Table S4. Summary of data obtained from NHGRI-EBI GWAS Catalog for SNPs that met the genome-wide significance p -value threshold of (5×10^{-8}) for traits in the nose region. RAF = risk allele frequency. OR = Odd ratio. CI = Confidence interval. NR: Not reported [168], [146], [158], [160]–[163], [165], [169].

| Reported trait | Variant and risk allele | Mapped gene | Location | Minor Allele | RAF | OR | Beta | CI | P-value | Reference |
|--|-------------------------|-----------------------------|-----------------------|--------------|------|----|----------------------|-------------|----------|-----------|
| Columella inclination | rs12410669 | <i>PAX7</i> | 1:18663724 | NR | NR | NR | NR | NR | 4.00E-09 | [161] |
| | chr8:101737776 | NR | Mapping not available | NR | NR | NR | NR | NR | 1.00E-08 | [161] |
| | rs1178103 | <i>HDAC9</i> | 7:18701744 | NR | NR | NR | NR | NR | 3.00E-08 | [161] |
| | rs11653132 | <i>CASC17</i> | 17:71133691 | NR | NR | NR | NR | NR | 3.00E-08 | [161] |
| | rs2045323 | NR | 4:153910747 | A | NR | NR | 0.018 unit increase | NR | 3.00E-09 | [161] |
| Columella size | rs10176525 | <i>RPL23AP28, PAX3</i> | 2:222174333 | NR | NR | NR | NR | NR | 1.00E-11 | [161] |
| | rs75976055 | <i>VPS13B</i> | 8:99614274 | NR | NR | NR | NR | NR | 4.00E-11 | [161] |
| | rs10810682 | <i>RN7SL720P, BNC2</i> | 9:16929844 | NR | NR | NR | NR | NR | 8.00E-09 | [161] |
| | rs921120 | <i>LINC01121, SIX2</i> | 2:45045902 | NR | NR | NR | NR | NR | 1.00E-08 | [161] |
| Factor 11, projection of the nose | rs3923268 | <i>ADAMTS10</i> | 19:8590032 | A | 0.10 | NR | 0.2867 unit increase | [0.18-0.39] | 5.00E-08 | [165] |
| Factor 21, depth of nasal alae | rs113036800 | NR | 8:57536468 | T | 0.01 | NR | 0.6913 unit increase | [0.45-0.93] | 1.00E-08 | [165] |
| Factor 7, width of cartilaginous portion | rs62031988 | <i>C16orf82</i> | 16:27006174 | C | 0.01 | NR | 0.7004 unit increase | [0.46-0.94] | 2.00E-08 | [165] |
| Nose protrusion | rs12427884 | <i>LINC00399, LINC00676</i> | 13:109711188 | NR | NR | NR | NR | NR | 2.00E-09 | [161] |
| Nose roundness 1 | rs9995821 | <i>SFRP2, DCHS2</i> | 4:153907214 | NR | NR | NR | NR | NR | 2.00E-12 | [161] |
| | rs36192537 | <i>PRDM16</i> | 1:3336678 | NR | NR | NR | NR | NR | 3.00E-11 | [161] |
| | rs11653132 | <i>CASC17</i> | 17:71133691 | NR | NR | NR | NR | NR | 2.00E-10 | [161] |
| | rs7633584 | <i>IGSF11</i> | 3:118937668 | NR | NR | NR | NR | NR | 2.00E-08 | [161] |
| | rs3118389 | <i>RPE65, ELOCP18</i> | 1:68395574 | NR | NR | NR | NR | NR | 5.00E-08 | [161] |
| Nose roundness 3 | rs9995821 | <i>SFRP2, DCHS2</i> | 4:153907214 | NR | NR | NR | NR | NR | 2.00E-10 | [161] |
| | rs1426654 | <i>SLC24A5</i> | 15:48134287 | NR | NR | NR | NR | NR | 2.00E-08 | [161] |
| Nose size | rs11653132 | <i>CASC17</i> | 17:71133691 | NR | NR | NR | NR | NR | 4.00E-12 | [161] |

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|--------------|------------|---------------------------------------|--------------|----|------|----|----|----|----------|-------|
| | rs12427884 | <i>LINC00399,</i> <i>LINC00676</i> | 13:109711188 | NR | NR | NR | NR | NR | 4.00E-10 | [161] |
| | rs36192537 | <i>PRDM16</i> | 1:3336678 | NR | NR | NR | NR | NR | 9.00E-09 | [161] |
| Nostril size | rs9995821 | <i>SFRP2, DCHS2</i> | 4:153907214 | NR | NR | NR | NR | NR | 2.00E-09 | [161] |
| | rs927833 | <i>LINC01432</i> | 20:22060939 | NR | NR | NR | NR | NR | 1.00E-08 | [161] |
| Segment 10 | rs4912082 | <i>CAPZB</i> | 1:19390302 | C | 0.30 | NR | NR | NR | 3.00E-08 | [169] |
| | rs10089785 | <i>TMEM74, EMC2</i> | 8:108587740 | C | 0.38 | NR | NR | NR | 3.00E-08 | [169] |
| Segment 11 | rs1370926 | <i>PAX3, RPL23AP28</i> | 2:222165783 | G | 0.22 | NR | NR | NR | 7.00E-62 | [169] |
| | rs4916071 | <i>LINC01748</i> | 1:60554827 | A | 0.48 | NR | NR | NR | 2.00E-51 | [169] |
| | rs742071 | <i>PAX7</i> | 1:18653380 | T | 0.40 | NR | NR | NR | 1.00E-15 | [169] |
| | rs6047635 | <i>RPL41P1, LINC01582</i> | 20:21800987 | T | 0.09 | NR | NR | NR | 2.00E-12 | [169] |
| | rs634687 | <i>ZNF407, ZADH2</i> | 18:75195005 | G | 0.07 | NR | NR | NR | 3.00E-11 | [169] |
| | rs12535551 | <i>EPSI5P1,</i> <i>HMGNI19</i> | 7:46637772 | G | 0.42 | NR | NR | NR | 5.00E-11 | [169] |
| | rs116792 | <i>ANKEF1, PARAL1</i> | 20:9990760 | G | 0.43 | NR | NR | NR | 5.00E-11 | [169] |
| | rs2401176 | <i>ADAMTSL3</i> | 15:83909612 | G | 0.48 | NR | NR | NR | 9.00E-11 | [169] |
| | rs6923760 | <i>PKHD1</i> | 6:51820430 | G | 0.48 | NR | NR | NR | 1.00E-10 | [169] |
| | rs66516258 | <i>LINC00382</i> | 13:79914990 | T | 0.18 | NR | NR | NR | 1.00E-09 | [169] |
| | rs16834081 | <i>LINC01778, LAPTMS</i> | 1:30819794 | C | 0.09 | NR | NR | NR | 2.00E-09 | [169] |
| | rs12070922 | <i>RPL7P10,</i> <i>RN7SKP247</i> | 1:81243161 | A | 0.12 | NR | NR | NR | 4.00E-09 | [169] |
| | rs12878658 | <i>DDHD1-DT,</i> <i>RPS3AP46</i> | 14:53611084 | A | 0.17 | NR | NR | NR | 5.00E-09 | [169] |
| | rs4686337 | <i>SRGAP3</i> | 3:9269531 | T | 0.48 | NR | NR | NR | 2.00E-08 | [169] |
| | rs10189338 | <i>LINC02898, PKDCC</i> | 2:42011482 | C | 0.29 | NR | NR | NR | 2.00E-08 | [169] |
| Segment 20 | rs1411551 | <i>LINC00676,</i> <i>LINC00399</i> | 13:109720688 | A | 0.25 | NR | NR | NR | 4.00E-12 | [169] |
| | rs1902713 | <i>PTPN20, GDF10</i> | 10:47297284 | C | 0.37 | NR | NR | NR | 2.00E-08 | [169] |
| | rs7674010 | <i>LEF1-AS1, RPSAP34</i> | 4:108373433 | T | 0.29 | NR | NR | NR | 4.00E-08 | [169] |
| Segment 21 | rs1520 | <i>KIF6</i> | 6:39559091 | G | 0.38 | NR | NR | NR | 2.00E-22 | [169] |
| | rs6113624 | <i>LINC00261,</i> <i>LINC01427</i> | 20:22305792 | A | 0.40 | NR | NR | NR | 7.00E-17 | [169] |
| | rs772154 | <i>NCAPH</i> | 2:96355926 | T | 0.34 | NR | NR | NR | 1.00E-08 | [169] |
| | rs73457129 | <i>RUNX2</i> | 6:45606313 | A | 0.15 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 22 | rs9381923 | <i>PKHD1, FTHIP5</i> | 6:51018173 | T | 0.26 | NR | NR | NR | 7.00E-19 | [169] |

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|------------|----------------|-----------------------------|-----------------------|----|------|----|----|----|----------|-------|
| | rs62443772 | <i>GLI3</i> | 7:42092350 | A | 0.21 | NR | NR | NR | 5.00E-16 | [169] |
| | rs6715010 | <i>LINC01376</i> | 2:19078027 | T | 0.47 | NR | NR | NR | 1.00E-14 | [169] |
| | rs2359442 | <i>RNA5SP455, SYT4</i> | 18:43963972 | A | 0.50 | NR | NR | NR | 3.00E-09 | [169] |
| | rs12055796 | <i>RCAN2</i> | 6:46338810 | T | 0.47 | NR | NR | NR | 2.00E-08 | [169] |
| Segment 23 | rs227832 | <i>SUPT3H, CDC5L</i> | 6:44713520 | C | 0.26 | NR | NR | NR | 4.00E-37 | [169] |
| | rs9310211 | <i>FOXP1</i> | 3:71182593 | A | 0.42 | NR | NR | NR | 5.00E-22 | [169] |
| | rs4811827 | <i>BMP7</i> | 20:57223184 | C | 0.43 | NR | NR | NR | 3.00E-09 | [169] |
| Segment 27 | rs9995821 | <i>SFRP2, DCHS2</i> | 4:153907214 | ? | NR | NR | NR | NR | 3.00E-22 | [163] |
| | chr3:127963189 | NR | Mapping not available | NR | NR | NR | NR | NR | 2.00E-11 | [163] |
| Segment 44 | rs9302943 | <i>ROCR, LINC01152</i> | 17:72038048 | A | 0.44 | NR | NR | NR | 1.00E-46 | [169] |
| | rs145965565 | <i>PTCH1</i> | 9:95511023 | G | 0.09 | NR | NR | NR | 1.00E-14 | [169] |
| | rs35395759 | <i>LINC01121, SIX2</i> | 2:45123522 | T | 0.28 | NR | NR | NR | 4.00E-10 | [169] |
| Segment 45 | rs798682 | <i>CADPS2</i> | 7:122347104 | A | 0.26 | NR | NR | NR | 9.00E-24 | [169] |
| | rs11190970 | <i>BTRC</i> | 10:101368575 | A | 0.20 | NR | NR | NR | 7.00E-09 | [169] |
| | rs149814396 | <i>SFRP1, RNU6-356P</i> | 8:41229590 | T | 0.25 | NR | NR | NR | 3.00E-08 | [169] |
| | rs1536446 | <i>SORBS1</i> | 10:95499803 | G | 0.41 | NR | NR | NR | 4.00E-08 | [169] |
| Segment 46 | rs11665450 | <i>TCF4, RNA5SP459</i> | 18:55177535 | T | 0.50 | NR | NR | NR | 1.00E-10 | [169] |
| Segment 48 | rs10122939 | <i>SLC24A2, MLLT3</i> | 9:20300845 | NR | NR | NR | NR | NR | 3.00E-10 | [163] |
| Segment 5 | rs9908442 | <i>CASC17</i> | 17:71141807 | A | 0.37 | NR | NR | NR | 3.00E-46 | [169] |
| | rs287104 | <i>KCTD15</i> | 19:33800090 | G | 0.35 | NR | NR | NR | 4.00E-37 | [169] |
| | rs58022575 | <i>MAGEF1, EPHB3</i> | 3:184615382 | G | 0.47 | NR | NR | NR | 3.00E-26 | [169] |
| | rs2098990 | <i>TBX3-AS1, UBA52P7</i> | 12:114982050 | A | 0.47 | NR | NR | NR | 7.00E-25 | [169] |
| | rs9633535 | <i>ARID5B</i> | 10:62076329 | T | 0.41 | NR | NR | NR | 4.00E-11 | [169] |
| | rs74921869 | <i>FGFRL1</i> | 4:1019594 | A | 0.19 | NR | NR | NR | 4.00E-11 | [169] |
| | rs11842203 | <i>SOX21-AS1, LINC00557</i> | 13:94856400 | G | 0.05 | NR | NR | NR | 7.00E-11 | [169] |
| | rs4582322 | <i>PWWP2A</i> | 5:160082393 | G | 0.40 | NR | NR | NR | 1.00E-08 | [169] |
| | rs7806852 | <i>DDX43P3, EIF4EP4</i> | 7:81589002 | G | 0.17 | NR | NR | NR | 2.00E-08 | [169] |
| Segment 52 | rs56063440 | <i>CACNA2D3</i> | 3:54697347 | NR | NR | NR | NR | NR | 1.00E-08 | [163] |
| Segment 53 | chr4:24163580 | NR | Mapping not available | NR | NR | NR | NR | NR | 9.00E-09 | [163] |
| Segment 54 | rs16983329 | <i>LINC01432</i> | 20:22054559 | NR | NR | NR | NR | NR | 2.00E-08 | [163] |

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|-----------------------------|-------------|----------------------|--------------|----|------|----|-----------------------|-----------------|----------|-------|
| Nasion position | rs7559271 | <i>PAX3</i> | 2:222203567 | G | NR | NR | 0.082 unit increase | NR | 4.00E-11 | [158] |
| Nose wing breadth | rs17640804 | <i>GLI3</i> | 7:42091791 | T | NR | NR | 0.00049 NR decrease | NR | 5.00E-10 | [158] |
| Nose protrusion | rs2045323 | <i>NR</i> | 4:153910747 | A | NR | NR | 0.00059 NR decrease | NR | 1.00E-08 | [158] |
| Nose tip angle | rs2045323 | <i>NR</i> | 4:153910747 | A | NR | NR | 0.016 unit increase | NR | 2.00E-08 | [158] |
| Nose bridge breadth | rs1852985 | <i>RUNX2, SUPT3H</i> | 6:45361919 | T | NR | NR | 0.00044 unit increase | NR | 2.00E-08 | [158] |
| Nose morphology measurement | rs118078182 | <i>COL23A1</i> | 5:178495197 | NR | NR | NR | 2.07 unit decrease | NR | 3.00E-10 | [168] |
| | rs2045323 | <i>NR</i> | 4:153910747 | NR | NR | NR | NR | NR | 2.00E-17 | [160] |
| Profile nasal angle | rs2193054 | <i>ROCR</i> | 17:72029668 | C | 0.47 | NR | 0.007 unit decrease | [0.0050-0.0090] | 6.00E-17 | [146] |
| | rs1859979 | <i>NR</i> | 17:71433002 | C | 0.46 | NR | 0.007 unit decrease | [0.005-0.009] | 1.00E-14 | [146] |
| | rs2058742 | <i>ROCR</i> | 17:72044406 | T | 0.28 | NR | 0.007 unit increase | NR | 8.00E-14 | [146] |
| | rs2159042 | <i>NR</i> | 17:71413188 | C | 0.48 | NR | 0.006 unit decrease | NR | 2.00E-11 | [146] |
| | rs2024070 | <i>NR</i> | 17:71423790 | C | 0.48 | NR | 0.006 unit decrease | NR | 3.00E-11 | [146] |
| | rs10744843 | <i>NR</i> | 12:114974938 | A | 0.27 | NR | 0.006 unit decrease | NR | 5.00E-08 | [146] |
| Profile nasal area | rs1859979 | <i>NR</i> | 17:71433002 | C | 0.46 | NR | 0.018 unit increase | [0.012-0.024] | 7.00E-12 | [146] |
| | rs2159042 | <i>NR</i> | 17:71413188 | C | 0.48 | NR | 0.019 unit increase | NR | 3.00E-11 | [146] |
| | rs2024070 | <i>NR</i> | 17:71423790 | C | 0.48 | NR | 0.019 unit increase | NR | 5.00E-11 | [146] |
| | rs9915190 | <i>CASC17</i> | 17:71146487 | A | 0.45 | NR | 0.016 unit decrease | [0.01-0.022] | 2.00E-09 | [146] |
| Nasolabial angle | rs1859979 | <i>NR</i> | 17:71433002 | C | 0.46 | NR | 0.013 unit decrease | [0.0091-0.0169] | 1.00E-10 | [146] |
| | rs2193054 | <i>ROCR</i> | 17:72029668 | C | 0.47 | NR | 0.012 unit decrease | NR | 5.00E-09 | [146] |
| | rs3105176 | <i>VPS13B</i> | 8:99499670 | C | 0.42 | NR | 0.013 unit increase | NR | 1.00E-08 | [146] |
| | rs2058742 | <i>ROCR</i> | 17:72044406 | T | 0.28 | NR | 0.013 unit increase | NR | 4.00E-08 | [146] |
| Nasal tip protrusion | rs2058742 | <i>ROCR</i> | 17:72044406 | T | 0.28 | NR | 0.02 unit decrease | NR | 2.00E-10 | [146] |
| | rs1859979 | <i>NR</i> | 17:71433002 | C | 0.46 | NR | 0.017 unit increase | [0.011-0.023] | 2.00E-10 | [146] |
| | rs2024070 | <i>NR</i> | 17:71423790 | C | 0.48 | NR | 0.018 unit increase | NR | 8.00E-10 | [146] |
| | rs2159042 | <i>NR</i> | 17:71413188 | C | 0.48 | NR | 0.017 unit increase | NR | 1.00E-09 | [146] |
| | rs9915190 | <i>CASC17</i> | 17:71146487 | A | 0.45 | NR | 0.016 unit decrease | [0.01-0.022] | 2.00E-09 | [146] |
| | rs2193054 | <i>ROCR</i> | 17:72029668 | C | 0.47 | NR | 0.017 unit increase | [0.011-0.023] | 5.00E-09 | [146] |
| Subnasal width | rs2206437 | <i>RN7SL680P</i> | 20:39364098 | A | 0.26 | NR | 0.283 unit decrease | [0.19-0.38] | 2.00E-09 | [146] |

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|--------------------------------------|---------------|-----------------------------|-----------------------|----|------|----|----------------------|---------------|----------|-------|
| Nasal width | rs2424399 | <i>LINC01726, LINC01727</i> | 20:21651907 | C | 0.23 | NR | 0.377 unit increase | [0.24-0.52] | 3.00E-08 | [154] |
| Nasal ala length | rs8007643 | <i>RNASE3, RNASE2</i> | 14:20897642 | T | 0.07 | NR | 1.064 unit increase | [0.70-1.43] | 3.00E-08 | [154] |
| Nose morphology measurement | rs12208924 | <i>RUNX2, SUPT3H</i> | 6:45374314 | NR | NR | NR | NR | NR | 4.00E-08 | [160] |
| Nasal bridge angle | rs9327968 | NR | 5:106632482 | C | 0.22 | NR | 0.52 unit decrease | NR | 5.00E-08 | [146] |
| Nose morphology measurement | rs118078182 | <i>COL23A1</i> | 5:178495197 | NR | NR | NR | 2.07 unit decrease | NR | 3.00E-10 | [168] |
| Nose morphology partial least square | rs3920540 | <i>LINC01428</i> | 20:7087091 | NR | NR | NR | 0.0652 unit increase | NR | 5.00E-08 | [168] |
| Nose morphology measurement | rs2045323 | NR | 4:153910747 | NR | NR | NR | NR | NR | 2.00E-17 | [160] |
| Nose morphology measurement | rs11988731 | <i>VPS13B</i> | 8:99066698 | NR | NR | NR | NR | NR | 6.00E-11 | [160] |
| Nose morphology measurement | rs4714845 | <i>SUPT3H</i> | 6:45262684 | NR | NR | NR | NR | NR | 6.00E-09 | [160] |
| Nose morphology measurement | rs66604011 | <i>SUPT3H</i> | 6:45085322 | NR | NR | NR | NR | NR | 1.00E-08 | [160] |
| Nose size | chr3:71227306 | NR | Mapping not available | NR | NR | NR | 0.049 unit increase | [0.040-0.059] | 8.00E-26 | [162] |
| | rs13097965 | <i>MAGEF1, EPHB3</i> | 3:184621969 | NR | NR | NR | 0.033 unit decrease | [0.041-0.025] | 2.00E-15 | [162] |
| | rs56063440 | <i>CACNA2D3</i> | 3:54697347 | NR | NR | NR | 0.03 unit increase | [0.021-0.039] | 6.00E-11 | [162] |
| | rs2929451 | <i>PPP1R3B, RNU6-1151P</i> | 8:9227785 | NR | NR | NR | 0.027 unit increase | [0.019-0.035] | 6.00E-11 | [162] |
| | rs5781117 | <i>LYPLAL1-AS1</i> | 1:219468846 | NR | NR | NR | 0.028 unit increase | [0.020-0.037] | 2.00E-10 | [162] |
| | rs146188897 | <i>LINC00676</i> | 13:109720345 | NR | NR | NR | 0.03 unit increase | [0.021-0.039] | 3.00E-10 | [162] |
| | rs10809266 | <i>RPS27AP14, DMRT2</i> | 9:1106093 | NR | NR | NR | 0.027 unit increase | [0.018-0.036] | 1.00E-09 | [162] |
| | rs702489 | <i>GLIS1</i> | 1:53732015 | NR | NR | NR | 0.038 unit increase | [0.025-0.050] | 3.00E-09 | [162] |
| | rs35130793 | <i>BMP7</i> | 20:57217109 | NR | NR | NR | 0.025 unit increase | [0.017-0.033] | 3.00E-09 | [162] |
| | rs2224309 | <i>RPL15P2, LINC02279</i> | 14:94867341 | NR | NR | NR | 0.031 unit decrease | [0.041-0.021] | 4.00E-09 | [162] |
| | rs10761129 | <i>ROR2</i> | 9:91724039 | NR | NR | NR | 0.026 unit decrease | [0.034-0.017] | 7.00E-09 | [162] |
| | chr6:44820741 | NR | Mapping not available | NR | NR | NR | 0.024 unit decrease | [0.032-0.016] | 1.00E-08 | [162] |
| | rs34091987 | <i>ROCR</i> | 17:72029446 | NR | NR | NR | 0.025 unit increase | [0.016-0.034] | 3.00E-08 | [162] |

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|--|------------|--------|-------------|----|----|----|---------------------|---------------|----------|-------|
| | rs10779169 | NR | 12:85574026 | NR | NR | NR | 0.023 unit decrease | [0.031-0.015] | 4.00E-08 | [162] |
| | rs424737 | ROBO1 | 3:78766756 | NR | NR | NR | 0.025 unit decrease | [0.033-0.016] | 5.00E-08 | [162] |
| | rs34702092 | RAD51B | 14:68525031 | NR | NR | NR | 0.026 unit decrease | [0.035-0.016] | 5.00E-08 | [162] |

Table S5. Summary of data obtained from NHGRI-EBI GWAS Catalog for SNPs that met the genome-wide significance p -value threshold of (5×10^{-8}) for traits in the mouth region. RAF = risk allele frequency. OR = Odd ratio. CI = Confidence interval. NR: Not reported [168], [146], [160], [161], [163], [165], [154], [169], [156].

| Reported trait | Variant and risk allele | Mapped gene | Location | Minor Allele | RAF | OR | Beta | CI | P-value | Reference |
|------------------------------|-------------------------|-------------|-----------------------|--------------|------|----|----------------------|---------------|----------|-----------|
| Mouth morphology measurement | rs4267450 | NR | 19:28336699 | A | 0.18 | NR | 0.1839 unit decrease | [0.11-0.26] | 7.00E-12 | [165] |
| Mouth morphology measurement | rs2211560 | NFIA | 1:60799963 | T | 0.45 | NR | 0.149 unit decrease | [0.09-0.208] | 8.00E-12 | [165] |
| Mouth morphology measurement | rs1285495 | LINC01036 | 1:187328751 | G | 0.40 | NR | 0.144 unit decrease | [0.084-0.204] | 1.00E-11 | [165] |
| Mouth morphology measurement | rs4685943 | LINC00620 | 3:5493590 | T | 0.01 | NR | 0.7797 unit increase | [0.47-1.09] | 1.00E-11 | [165] |
| Mouth morphology measurement | rs145030395 | LINC02477 | 4:160452045 | A | 0.01 | NR | 0.8365 unit increase | [0.48-1.19] | 1.00E-11 | [165] |
| Mouth morphology measurement | rs117362612 | RBMXP1 | 6:48288656 | A | 0.01 | NR | 0.8015 unit increase | [0.47-1.13] | 1.00E-11 | [165] |
| Mouth morphology measurement | rs55671240 | TRMT11 | 6:126128916 | A | 0.41 | NR | 0.1462 unit increase | [0.086-0.206] | 2.00E-11 | [165] |
| Mouth morphology measurement | rs2151522 | NR | 6:126888948 | A | 0.39 | NR | 0.1547 unit increase | [0.094-0.215] | 2.00E-11 | [165] |
| Mouth morphology measurement | rs1178127 | HDAC9 | 7:18727720 | G | 0.26 | NR | 0.1672 unit increase | [0.1-0.23] | 2.00E-11 | [165] |
| Mouth morphology measurement | rs72680930 | OXR1 | 8:106504002 | G | 0.01 | NR | 0.7774 unit increase | [0.45-1.11] | 2.00E-11 | [165] |
| Mouth morphology measurement | rs117477265 | NHLRC2 | 10:113865288 | T | 0.05 | NR | 0.3472 unit decrease | [0.21-0.49] | 2.00E-11 | [165] |
| Mouth morphology measurement | 12:128960122 | NR | Mapping not available | T | 0.01 | NR | 0.9376 unit increase | [0.59-1.29] | 2.00E-11 | [165] |
| Mouth morphology measurement | 11:63826898 | NR | Mapping not available | G | 0.01 | NR | 0.7681 unit decrease | [0.44-1.09] | 2.00E-11 | [165] |
| Mouth morphology measurement | rs11180096 | ATXN7L3B | 12:74519416 | C | 0.03 | NR | 0.449 unit increase | [0.26-0.63] | 2.00E-11 | [165] |
| Mouth morphology measurement | rs6538174 | NAV3 | 12:77443212 | G | 0.25 | NR | 0.1637 unit decrease | [0.095-0.232] | 3.00E-11 | [165] |
| Mouth morphology measurement | rs182099288 | POMP | 13:28664099 | C | 0.01 | NR | 0.848 unit decrease | [0.49-1.2] | 3.00E-11 | [165] |
| Mouth morphology measurement | rs77848072 | LINC00922 | 16:65499829 | C | 0.01 | NR | 0.8842 unit increase | [0.53-1.24] | 3.00E-11 | [165] |

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|------------------------------|-------------|-----------------------------|--------------|-----|------|----|----------------------|---------------|----------|-------|
| Mouth morphology measurement | rs118035325 | <i>NFATC1</i> | 18:79400748 | T | 0.02 | NR | 0.4972 unit increase | [0.3-0.7] | 3.00E-11 | [165] |
| Factor 15, philtrum width | rs188166084 | <i>RNU6-783P</i> | 11:23889343 | C | 0.48 | NR | 0.1426 unit increase | [0.083-0.202] | 1.00E-08 | [165] |
| | rs9516 | <i>KCNE3</i> | 11:74455233 | G | 0.44 | NR | 0.1408 unit decrease | [0.082-0.2] | 1.00E-08 | [165] |
| | rs331334 | <i>DMD</i> | X:32288709 | T | 0.41 | NR | 0.1273 unit decrease | [0.076-0.178] | 1.00E-08 | [165] |
| | rs143386295 | <i>AIFM1, ELF4</i> | X:130112644 | T | 0.01 | NR | 0.7395 unit decrease | [0.43-1.05] | 1.00E-08 | [165] |
| | rs142620191 | <i>TBX5</i> | 12:114370639 | CCT | 0.20 | NR | 0.1831 unit increase | [0.11-0.26] | 1.00E-08 | [165] |
| | rs12580740 | <i>LINC02439</i> | 12:118839490 | T | 0.06 | NR | 0.3095 unit increase | [0.18-0.44] | 1.00E-08 | [165] |
| | rs9567488 | <i>NUFIPI, LINC00330</i> | 13:44855298 | T | 0.22 | NR | 0.1752 unit increase | [0.1-0.25] | 1.00E-08 | [165] |
| | rs34833487 | <i>RNA5SP38</i> | 13:106163884 | CT | 0.13 | NR | 0.242 unit increase | [0.15-0.33] | 1.00E-08 | [165] |
| | rs75617718 | <i>LINC02134, ABCC12</i> | 16:48060840 | T | 0.02 | NR | 0.4864 unit increase | [0.28-0.69] | 1.00E-08 | [165] |
| | rs117450953 | <i>LONP2</i> | 16:48258340 | T | 0.02 | NR | 0.526 unit increase | [0.31-0.74] | 1.00E-08 | [165] |
| | rs139724140 | <i>SLAH1</i> | 16:48367763 | T | 0.02 | NR | 0.4757 unit increase | [0.28-0.67] | 1.00E-08 | [165] |
| | rs3851779 | <i>NXN</i> | 17:804089 | C | 0.13 | NR | 0.2068 unit decrease | [0.12-0.29] | 1.00E-08 | [165] |
| | rs145984379 | <i>LINC02775</i> | 1:214143432 | T | 0.01 | NR | 0.8007 unit increase | [0.46-1.14] | 1.00E-08 | [165] |
| | rs115648813 | <i>LINC01828, LINC01829</i> | 2:67196530 | C | 0.03 | NR | 0.4252 unit decrease | [0.25-0.6] | 2.00E-08 | [165] |
| | rs113358490 | <i>NPAS2, NPAS2-AS1</i> | 2:100977542 | A | 0.01 | NR | 0.7548 unit increase | [0.44-1.07] | 2.00E-08 | [165] |
| | rs372574584 | <i>CSRNP3</i> | 2:165666620 | A | 0.29 | NR | 0.1564 unit increase | [0.09-0.223] | 2.00E-08 | [165] |
| | rs62247992 | <i>POMGNT2</i> | 3:43095204 | A | 0.16 | NR | 0.1904 unit increase | [0.11-0.27] | 2.00E-08 | [165] |
| | rs62257590 | <i>DNAH1</i> | 3:52334303 | G | 0.03 | NR | 0.3817 unit increase | [0.22-0.54] | 2.00E-08 | [165] |
| | rs71596245 | <i>SH3D19</i> | 4:151264428 | CA | 0.47 | NR | 0.1403 unit decrease | [0.081-0.2] | 2.00E-08 | [165] |
| | rs10072935 | <i>NR</i> | 5:68412402 | A | 0.28 | NR | 0.1624 unit increase | [0.097-0.228] | 2.00E-08 | [165] |
| | rs148586546 | <i>RUFY1, U4</i> | 5:179521364 | A | 0.08 | NR | 0.2587 unit increase | [0.15-0.37] | 2.00E-08 | [165] |
| | rs140109562 | <i>RNU6-682P, RPL10P19</i> | 8:8949768 | G | 0.01 | NR | 0.8405 unit decrease | [0.49-1.19] | 2.00E-08 | [165] |
| | rs2379251 | <i>NR</i> | 8:141657166 | C | 0.22 | NR | 0.1736 unit decrease | [0.1-0.24] | 2.00E-08 | [165] |
| | rs117558151 | <i>GNA14, GNA14-AS1</i> | 9:77502833 | C | 0.02 | NR | 0.524 unit increase | [0.32-0.73] | 2.00E-08 | [165] |
| | rs6076065 | <i>NAPB</i> | 20:23387774 | A | 0.40 | NR | 0.1417 unit decrease | [0.082-0.201] | 2.00E-08 | [165] |
| | rs2424533 | <i>NAPB</i> | 20:23395270 | T | 0.40 | NR | 0.1435 unit decrease | [0.084-0.203] | 2.00E-08 | [165] |
| | rs10159656 | <i>PCDH15</i> | 10:54461990 | G | 0.01 | NR | 0.5902 unit decrease | [0.34-0.168] | 1.00E-08 | [165] |

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|---|-------------|-----------------------------|-----------------------|-------|------|----|----------------------|---------------|----------|-------|
| Factor 3, length of philtrum | rs144225767 | <i>BICCI1, RN7SKP196</i> | 10:58862443 | T | 0.24 | NR | 0.1792 unit increase | [0.11-0.25] | 1.00E-08 | [165] |
| | rs201657578 | NR | 2:183457924 | GTGCA | 0.01 | NR | 0.8352 unit decrease | [0.50-1.17] | 2.00E-08 | [165] |
| | rs201900072 | <i>LINC02098, LINC02725</i> | 11:128190250 | G | 0.14 | NR | 0.201 unit decrease | [0.12-0.29] | 2.00E-08 | [165] |
| | rs186496085 | NR | X:113378184 | G | 0.01 | NR | 0.713 unit increase | [0.43-1] | 2.00E-08 | [165] |
| | rs117438382 | <i>SRRM4</i> | 12:118976759 | A | 0.01 | NR | 0.8872 unit increase | [0.57-1.2] | 2.00E-08 | [165] |
| | rs1887596 | <i>WASF3, GPR12</i> | 13:26697233 | G | 0.32 | NR | 0.1741 unit increase | [0.11-0.24] | 2.00E-08 | [165] |
| | rs137862450 | <i>FMN1</i> | 15:32966273 | GT | 0.05 | NR | 0.3251 unit increase | [0.19-0.46] | 2.00E-08 | [165] |
| | rs192393731 | <i>RGS7</i> | 1:240933088 | C | 0.03 | NR | 0.4316 unit increase | [0.25-0.61] | 2.00E-08 | [165] |
| | rs34282335 | <i>CNTNAP5</i> | 2:124604230 | G | 0.14 | NR | 0.202 unit decrease | [0.12-0.29] | 2.00E-08 | [165] |
| | rs11369626 | <i>RAP1BP2</i> | 3:104161514 | A | 0.05 | NR | 0.3273 unit increase | [0.19-0.46] | 2.00E-08 | [165] |
| | rs12643302 | <i>ADH1B</i> | 4:171407309 | C | 0.29 | NR | 0.1538 unit decrease | [0.088-0.22] | 2.00E-08 | [165] |
| | rs4958231 | <i>WSPAR</i> | 5:133819778 | G | 0.37 | NR | 0.1482 unit increase | [0.087-0.21] | 2.00E-08 | [165] |
| | rs62486163 | NR | 7:153748297 | A | 0.40 | NR | 0.1377 unit decrease | [0.08-0.196] | 2.00E-08 | [165] |
| | rs888349 | <i>KCNK9</i> | 8:139657502 | G | 0.22 | NR | 0.1673 unit increase | [0.096-0.239] | 2.00E-08 | [165] |
| | rs113978995 | <i>MIR1302-7</i> | 8:141804582 | C | 0.02 | NR | 0.5064 unit increase | [0.29-0.72] | 2.00E-08 | [165] |
| Factor 17, height of vermillion upper lip | rs146579684 | <i>LINC02206, HMGN2P47</i> | 15:66982554 | A | 0.01 | NR | 0.8459 unit decrease | [0.49-1.2] | 1.00E-08 | [165] |
| | rs4780490 | <i>LINC01195, RNA5SP403</i> | 16:9537505 | C | 0.36 | NR | 0.1498 unit increase | [0.087-0.212] | 1.00E-08 | [165] |
| | rs4444359 | <i>RMI2, LITAF</i> | 16:11471156 | A | 0.20 | NR | 0.1991 unit decrease | [0.12-0.27] | 1.00E-08 | [165] |
| | rs61629263 | <i>CFAP97D1</i> | 17:43782280 | G | 0.28 | NR | 0.1554 unit decrease | [0.09-0.22] | 1.00E-08 | [165] |
| | rs554111 | <i>KIF17</i> | 1:20715807 | C | 0.31 | NR | 0.1642 unit decrease | [0.099-0.229] | 1.00E-08 | [165] |
| | 2:53550611 | NR | Mapping not available | T | 0.01 | NR | 0.762 unit decrease | [0.45-1.07] | 1.00E-08 | [165] |
| | rs1605857 | <i>PRCPP1</i> | 2:101560771 | C | 0.40 | NR | 0.1423 unit decrease | [0.082-0.203] | 1.00E-08 | [165] |
| | rs138802801 | <i>CRYGFP, MEAF6P1</i> | 2:209169035 | C | 0.01 | NR | 0.9963 unit decrease | [0.63-1.36] | 1.00E-08 | [165] |
| | rs148598141 | <i>RPL21P37, MAP2</i> | 2:209352374 | G | 0.01 | NR | 0.8378 unit decrease | [0.49-1.19] | 1.00E-08 | [165] |
| | rs11898702 | <i>SPAG16</i> | 2:213467791 | G | 0.02 | NR | 0.4998 unit increase | [0.29-0.71] | 1.00E-08 | [165] |
| | rs9325389 | <i>MUC4, LINC01983</i> | 3:195829508 | T | 0.29 | NR | 0.1547 unit increase | [0.089-0.221] | 1.00E-08 | [165] |
| | rs143838665 | <i>LINC02224</i> | 5:44518479 | CT | 0.21 | NR | 0.1683 unit decrease | [0.097-0.24] | 1.00E-08 | [165] |
| | rs62375660 | <i>PPP2R2B, GPR154</i> | 5:146578904 | T | 0.03 | NR | 0.3965 unit decrease | [0.23-0.56] | 1.00E-08 | [165] |
| | rs144345632 | <i>UFL1-AS1</i> | 6:96439019 | TA | 0.20 | NR | 0.1732 unit increase | [0.1-0.25] | 1.00E-08 | [165] |

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|---|-------------|----------------------|-----------------------|-----|------|----|----------------------|---------------|----------|-------|
| | rs1845631 | NR | 8:34177997 | C | 0.26 | NR | 0.1829 unit decrease | [0.12-0.25] | 1.00E-08 | [165] |
| | rs72713618 | FREMI | 9:14883256 | A | 0.02 | NR | 0.5917 unit decrease | [0.39-0.8] | 1.00E-08 | [165] |
| | rs372248726 | CHRNA4 | 20:63369848 | T | 0.01 | NR | 0.632 unit increase | [0.37-0.9] | 1.00E-08 | [165] |
| | rs116924979 | SH2D4B | 10:80639639 | T | 0.02 | NR | 0.5424 unit decrease | [0.31-0.77] | 1.00E-08 | [165] |
| | rs186247051 | MYOF | 10:93379825 | A | 0.01 | NR | 0.6059 unit decrease | [0.35-0.87] | 1.00E-08 | [165] |
| | rs377161956 | LINC02181 | 16:87004271 | C | 0.03 | NR | 0.4141 unit decrease | [0.24-0.59] | 2.00E-08 | [165] |
| | rs1015495 | ANOS1, DRAXINP1 | X:8743713 | A | 0.34 | NR | 0.1304 unit decrease | [0.078-0.183] | 2.00E-08 | [165] |
| | rs191407208 | HDAC6 | X:48821632 | A | 0.01 | NR | 0.8159 unit decrease | [0.48-1.15] | 2.00E-08 | [165] |
| | rs187026599 | VDACIP2, GAGE1 | X:49613888 | G | 0.01 | NR | 0.748 unit decrease | [0.43-1.07] | 2.00E-08 | [165] |
| | rs113233319 | MRPS36P5 | 12:42959610 | G | 0.02 | NR | 0.5432 unit decrease | [0.31-0.78] | 2.00E-08 | [165] |
| | rs73228881 | OBI1-AS1 | 13:78432067 | C | 0.14 | NR | 0.2026 unit increase | [0.12-0.29] | 2.00E-08 | [165] |
| | rs114351729 | SYNE3, LINC02292 | 14:95394460 | T | 0.02 | NR | 0.4941 unit increase | [0.29-0.7] | 2.00E-08 | [165] |
| Factor 6, height of vermilion lower lip | rs201917376 | AGAP6, TIMM23B-AGAP6 | 10:49997992 | CAT | 0.07 | NR | 0.3004 unit increase | [0.18-0.42] | 2.00E-08 | [165] |
| | rs143569928 | LINC02726 | 11:23783102 | T | 0.01 | NR | 0.6715 unit decrease | [0.39-0.95] | 2.00E-08 | [165] |
| | rs142491398 | DANT2, RN7SL712P | X:115978123 | T | 0.05 | NR | 0.268 unit increase | [0.16-0.38] | 2.00E-08 | [165] |
| | rs17139233 | RBFOX1 | 16:6047041 | G | 0.18 | NR | 0.2001 unit increase | [0.12-0.28] | 2.00E-08 | [165] |
| | rs117241547 | XYLT1 | 16:17430368 | T | 0.01 | NR | 0.7132 unit increase | [0.45-0.98] | 2.00E-08 | [165] |
| | rs11643520 | RBBP6 | 16:24520397 | C | 0.11 | NR | 0.2174 unit increase | [0.12-0.31] | 2.00E-08 | [165] |
| | rs139244548 | DLGAP1 | 18:3718339 | G | 0.01 | NR | 0.7326 unit decrease | [0.42-1.05] | 2.00E-08 | [165] |
| | rs77246228 | LINC01781 | 1:80596655 | G | 0.09 | NR | 0.2556 unit decrease | [0.15-0.36] | 2.00E-08 | [165] |
| | rs76876052 | KRT8P45, SMUIP1 | 1:157073077 | AT | 0.23 | NR | 0.161 unit decrease | [0.092-0.23] | 2.00E-08 | [165] |
| | rs1109916 | RN7SL299P | 1:232182198 | C | 0.30 | NR | 0.1549 unit decrease | [0.09-0.219] | 2.00E-08 | [165] |
| | rs116753621 | RBMS3, RBMS3-AS2 | 3:29530073 | A | 0.02 | NR | 0.5859 unit increase | [0.35-0.82] | 2.00E-08 | [165] |
| | rs7688540 | ZNF732, ZNF876P | 4:267367 | G | 0.21 | NR | 0.1771 unit decrease | [0.099-0.256] | 2.00E-08 | [165] |
| | rs142229939 | TENM2 | 5:167260293 | GA | 0.01 | NR | 0.8655 unit increase | [0.49-1.24] | 3.00E-08 | [165] |
| | rs79228291 | NR | Mapping not available | A | 0.11 | NR | 0.2279 unit decrease | [0.13-0.33] | 3.00E-08 | [165] |
| | rs145147495 | Y_RNA, RPL35AP3 | 6:136968827 | A | 0.01 | NR | 0.7289 unit increase | [0.45-1] | 3.00E-08 | [165] |
| | rs79577636 | ADAPI, GET4 | 7:896555 | A | 0.01 | NR | 0.8104 unit increase | [0.48-1.14] | 3.00E-08 | [165] |
| | rs17150569 | NXPH1 | 7:8527717 | T | 0.01 | NR | 0.7558 unit decrease | [0.44-1.07] | 3.00E-08 | [165] |

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| | rs117584411 | NR | 7:19503337 | T | 0.03 | NR | 0.4036 unit increase | [0.23-0.58] | 3.00E-08 | [165] |
| | rs73708431 | NR | 7:91489997 | G | 0.01 | NR | 0.8936 unit increase | [0.53-1.26] | 3.00E-08 | [165] |
| | rs1027479 | <i>TMEM74</i> | 8:108713279 | C | 0.36 | NR | 0.1526 unit increase | [0.092-0.213] | 3.00E-08 | [165] |
| | rs7278536 | <i>NFIP3</i> | 21:14003186 | G | 0.39 | NR | 0.1421 unit increase | [0.083-0.201] | 3.00E-08 | [165] |
| | rs72771288 | <i>LINC02660, LINC02639</i> | 10:3873288 | T | 0.01 | NR | 0.9495 unit increase | [0.59-1.31] | 3.00E-08 | [165] |
| Factor 5, width of mouth relative to central midface | rs7117543 | <i>GALNT18</i> | 11:11466726 | C | 0.05 | NR | 0.3448 unit increase | [0.26-0.43] | 3.00E-11 | [165] |
| | rs12565500 | <i>ADGRL4</i> | 1:79015968 | A | 0.16 | NR | 0.1907 unit decrease | [0.11-0.27] | 3.00E-11 | [165] |
| | rs4291556 | <i>LARP7P1, FMOD</i> | 1:203386941 | C | 0.05 | NR | 0.3182 unit increase | [0.18-0.45] | 3.00E-11 | [165] |
| | rs80107998 | <i>RGS7, FH</i> | 1:241419648 | T | 0.04 | NR | 0.356 unit increase | [0.2-0.51] | 4.00E-11 | [165] |
| | rs1404872 | <i>SDK1</i> | 7:3305354 | A | 0.09 | NR | 0.2705 unit decrease | [0.17-0.37] | 4.00E-11 | [165] |
| | rs17133277 | <i>SDK1</i> | 7:3407187 | G | 0.09 | NR | 0.2476 unit decrease | [0.14-0.35] | 4.00E-11 | [165] |
| | rs4744531 | <i>WDR5-DT, ARF4P1</i> | 9:134119110 | A | 0.12 | NR | 0.2327 unit increase | [0.14-0.32] | 4.00E-11 | [165] |
| | rs6123683 | <i>BMP7</i> | 20:57249453 | G | 0.35 | NR | 0.148 unit increase | [0.086-0.21] | 4.00E-11 | [165] |
| | 10:116210229 | NR | Mapping not available | T | 0.01 | NR | 0.718 unit decrease | [0.44-1] | 4.00E-11 | [165] |
| | rs2390357 | <i>CLYBL</i> | 13:99803868 | G | 0.35 | NR | 0.1529 unit decrease | [0.09-0.215] | 5.00E-11 | [165] |
| | rs141606281 | <i>PCCA</i> | 13:100217806 | T | 0.03 | NR | 0.4203 unit decrease | [0.25-0.59] | 5.00E-11 | [165] |
| | rs75870422 | <i>PCCA</i> | 13:100323837 | C | 0.03 | NR | 0.4196 unit decrease | [0.24-0.59] | 5.00E-11 | [165] |
| | rs116711337 | <i>CDC42EP3</i> | 2:37678515 | C | 0.01 | NR | 0.6365 unit decrease | [0.37-0.91] | 5.00E-11 | [165] |
| | rs36106334 | <i>MECOM, LINC01266</i> | 3:935095 | G | 0.29 | NR | 0.1536 unit decrease | [0.088-0.219] | 5.00E-11 | [165] |
| | rs71288019 | <i>SACMIL</i> | 3:45710501 | CT | 0.46 | NR | 0.158 unit increase | [0.099-0.217] | 5.00E-11 | [165] |
| | rs6414928 | <i>MSNPI</i> | 5:25907800 | A | 0.22 | NR | 0.1868 unit increase | [0.12-0.26] | 6.00E-11 | [165] |
| | rs112079675 | <i>HEXB</i> | 5:74648491 | C | 0.02 | NR | 0.524 unit increase | [0.31-0.74] | 6.00E-11 | [165] |
| Lip protrusion | rs2786116 | <i>CRB1</i> | 1:197364649 | NR | NR | NR | NR | NR | 9.00E-09 | [161] |
| | rs142166760 | <i>GCC2</i> | 2:108502395 | NR | NR | NR | NR | NR | 9.00E-09 | [161] |
| | rs6570789 | <i>STXBP5-AS1</i> | 6:147080057 | NR | NR | NR | NR | NR | 9.00E-09 | [161] |
| Lower lip protrusion | rs2786116 | <i>CRB1</i> | 1:197364649 | NR | NR | NR | NR | NR | 9.00E-09 | [161] |
| | rs142166760 | <i>GCC2</i> | 2:108502395 | NR | NR | NR | NR | NR | 9.00E-09 | [161] |
| | rs6570789 | <i>STXBP5-AS1</i> | 6:147080057 | NR | NR | NR | NR | NR | 9.00E-09 | [161] |
| Lip thickness 1 | rs907613 | <i>LSP1</i> | 11:1853062 | NR | NR | NR | NR | NR | 7.00E-09 | [161] |
| | rs1426654 | <i>SLC24A5</i> | 15:48134287 | NR | NR | NR | NR | NR | 8.00E-09 | [161] |

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|--------------------------|------------|----------------------------------|--------------|----|------|----|----|----|----------|-------|
| Lower lip thickness 1 | rs907613 | <i>LSP1</i> | 11:1853062 | NR | NR | NR | NR | NR | 8.00E-09 | [161] |
| | rs1426654 | <i>SLC24A5</i> | 15:48134287 | NR | NR | NR | NR | NR | 8.00E-09 | [161] |
| Lower lip thickness 2 | rs3790553 | <i>WARS2</i> | 1:119036653 | NR | NR | NR | NR | NR | 8.00E-09 | [161] |
| | rs907613 | <i>LSP1</i> | 11:1853062 | NR | NR | NR | NR | NR | 8.00E-09 | [161] |
| | rs1426654 | <i>SLC24A5</i> | 15:48134287 | NR | NR | NR | NR | NR | 8.00E-09 | [161] |
| Lip thickness ratio 1 | rs3790553 | <i>WARS2</i> | 1:119036653 | NR | NR | NR | NR | NR | 8.00E-09 | [161] |
| Lip thickness ratio 2 | rs3790553 | <i>WARS2</i> | 1:119036653 | NR | NR | NR | NR | NR | 9.00E-09 | [161] |
| Segment 17 | rs12890110 | <i>RAD51B</i> | 14:68314878 | C | 0.36 | NR | NR | NR | 3.00E-08 | [169] |
| Segment 18 | rs4675617 | <i>SATB2-AS1, LINC01877</i> | 2:199478026 | A | 0.16 | NR | NR | NR | 3.00E-08 | [169] |
| | rs7373685 | <i>EEFSEC</i> | 3:128388177 | C | 0.26 | NR | NR | NR | 3.00E-08 | [169] |
| | rs657913 | <i>MIR124-1HG, MSRA- DT</i> | 8:10025065 | G | 0.44 | NR | NR | NR | 3.00E-08 | [169] |
| | rs12881623 | <i>PRKCH, SLC38A6</i> | 14:61098119 | C | 0.31 | NR | NR | NR | 3.00E-08 | [169] |
| Segment 19 | rs6568401 | <i>RN7SKP211, LINC02836</i> | 6:105740943 | C | 0.26 | NR | NR | NR | 4.00E-08 | [169] |
| | rs62051935 | <i>LINC00917, FENDRR</i> | 16:86462256 | A | 0.18 | NR | NR | NR | 4.00E-08 | [169] |
| Segment 30 | rs74112009 | <i>LINC02820, RASSF9</i> | 12:85414626 | NR | NR | NR | NR | NR | 3.00E-08 | [163] |
| Segment 32 | rs8176501 | <i>TFPI</i> | 2:187488936 | G | 0.29 | NR | NR | NR | 4.00E-08 | [169] |
| Segment 34 | rs1696840 | <i>FGFR2</i> | 10:121584395 | G | 0.33 | NR | NR | NR | 4.00E-08 | [169] |
| | rs13117653 | <i>LINC01396, STX18- AS1</i> | 4:4803727 | A | 0.33 | NR | NR | NR | 4.00E-08 | [169] |
| Segment 35 | rs2695152 | <i>NAV3</i> | 12:77534016 | G | 0.32 | NR | NR | NR | 4.00E-08 | [169] |
| Segment 36 | rs921119 | <i>SLX2, LINC01121</i> | 2:45045673 | C | 0.29 | NR | NR | NR | 4.00E-08 | [169] |
| | rs6022641 | <i>RNU7-14P, ZNF217</i> | 20:53657469 | C | 0.34 | NR | NR | NR | 4.00E-08 | [169] |
| Segment 38 | rs303751 | <i>NFIB, CDCA4P1</i> | 9:14480822 | A | 0.25 | NR | NR | NR | 4.00E-08 | [169] |
| | rs227727 | <i>C17orf67, NOG</i> | 17:56699594 | T | 0.44 | NR | NR | NR | 4.00E-08 | [169] |
| Segment 4 | rs871502 | <i>CCDC26</i> | 8:128851402 | G | 0.21 | NR | NR | NR | 3.00E-08 | [169] |
| | rs1391361 | <i>CD96</i> | 3:111538558 | T | 0.32 | NR | NR | NR | 3.00E-08 | [169] |
| Segment 9 | rs9923447 | <i>RPGRIP1L</i> | 16:53609191 | T | 0.22 | NR | NR | NR | 3.00E-08 | [169] |
| | rs7694450 | <i>TNIP3, NDNF</i> | 4:121076949 | A | 0.43 | NR | NR | NR | 3.00E-08 | [169] |

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| | rs2465274 | <i>NHP2P2, HOXA1</i> | 7:27068508 | A | 0.30 | NR | NR | NR | 3.00E-08 | [169] |
| | rs10919462 | <i>PRRX1, MROH9</i> | 1:170765749 | A | 0.45 | NR | NR | NR | 4.00E-08 | [169] |
| | rs76770688 | <i>KCNN2, YTHDC2</i> | 5:113649976 | G | 0.44 | NR | NR | NR | 4.00E-08 | [169] |
| | rs1907342 | <i>LRMDA</i> | 10:76404010 | G | 0.17 | NR | NR | NR | 4.00E-08 | [169] |
| | rs6578283 | <i>KCNQ1, KCNQ1OT1</i> | 11:2652345 | G | 0.30 | NR | NR | NR | 4.00E-08 | [169] |
| | rs10779162 | <i>LINC02820, RASSF9</i> | 12:85488139 | T | 0.07 | NR | NR | NR | 4.00E-08 | [169] |
| Upper lip height | rs2881324 | <i>EPAS1</i> | 2:46349755 | G | 0.10 | NR | 0.355 unit increase | NR | 3.00E-08 | [146] |
| Labial fissure width | rs56203676 | <i>LRRTM4</i> | 2:77553719 | CAAA | 0.41 | NR | 0.4608 unit decrease | [0.26-0.66] | 2.00E-08 | [154] |
| | rs71288019 | <i>SACMIL</i> | 3:45710501 | C | 0.45 | NR | 0.5144 unit increase | [0.32-0.71] | 2.00E-08 | [154] |
| Philtrum length | rs11707813 | <i>FHIT</i> | 3:61195644 | C | 0.16 | NR | 0.3952 unit increase | [0.23-0.56] | 2.00E-08 | [154] |
| Upper lip height | rs820217 | <i>SAP30BP</i> | 17:75692214 | A | 0.35 | NR | 0.2727 unit increase | [0.15-0.39] | 2.00E-08 | [154] |
| Lower lip height | rs4685943 | <i>LINC00620</i> | 3:5493590 | T | 0.01 | NR | 1.491 unit increase | [0.93-2.05] | 2.00E-08 | [154] |
| Right upper lip thickness | rs6656763 | NR | Mapping not available | G | 0.36 | NR | 0.017 unit decrease | - | 3.00E-08 | [146] |
| Philtrum width | rs255877 | <i>MCC</i> | 5:113417887 | G | NR | NR | 0.2 unit increase | [0.14-0.26] | 9.00E-09 | [156] |
| Philtrum width | rs2522825 | <i>NHP2P2, HOXA1</i> | 7:27072375 | T | NR | NR | 0.19 unit decrease | [0.13-0.26] | 9.00E-09 | [156] |
| Mouth morphology | rs970797 | <i>MTX2, RPSAP25</i> | 2:176247091 | NR | NR | NR | NR | NR | 6.00E-11 | [160] |
| Mouth morphology principal component | rs60159418 | <i>PCDH7</i> | 4:31119130 | NR | NR | NR | 17 unit decrease | NR | 7.00E-12 | [168] |

Table S6. Summary of data obtained from NHGRI-EBI GWAS Catalog for SNPs that met the genome-wide significance p -value threshold of (5×10^{-8}) for traits in the chin/lower face region. RAF = risk allele frequency. OR = Odd ratio. CI = Confidence interval. NR: Not reported [158], [160]–[163], [169].

| Reported Trait | Variant and risk allele | Mapped gene | Location | Minor Allele | RAF | OR | Beta | CI | P-value | Reference |
|---------------------|-------------------------|--------------------------|--------------|--------------|-----|------|------|---------------|----------|-----------|
| Chin protrusion 1 | rs2786116 | <i>CRB1</i> | 1:197364649 | NR | NR | NR | NR | NR | 7.00E-11 | [161] |
| Chin protrusion 2 | rs2786116 | <i>CRB1</i> | 1:197364649 | NR | NR | NR | NR | NR | 7.00E-11 | [161] |
| Jaw protrusion 2 | rs142166760 | <i>GCC2</i> | 2:108502395 | NR | NR | NR | NR | NR | 4.00E-08 | [161] |
| | rs6950680 | <i>CPED1</i> | 7:121150233 | NR | NR | NR | NR | NR | 4.00E-08 | [161] |
| Jaw protrusion 5 | rs142166760 | <i>GCC2</i> | 2:108502395 | NR | NR | NR | NR | NR | 4.00E-08 | [161] |
| | rs6950680 | <i>CPED1</i> | 7:121150233 | NR | NR | NR | NR | NR | 4.00E-08 | [161] |
| Jaw slope 2 | rs12472263 | <i>LINC01965, AHCYP3</i> | 2:104095684 | NR | NR | NR | NR | NR | 4.00E-08 | [161] |
| | rs142166760 | <i>GCC2</i> | 2:108502395 | NR | NR | NR | NR | NR | 4.00E-08 | [161] |
| Lower face flatness | rs142166760 | <i>GCC2</i> | 2:108502395 | NR | NR | NR | NR | NR | 4.00E-08 | [161] |
| Chin dimples | rs62578082 | <i>LMX1B, MVB12B</i> | 9:126514762 | NR | NR | 1.14 | NR | [1.089-1.194] | 7.00E-11 | [162] |
| | rs1194708 | <i>LNCAROD, THAP12P3</i> | 10:524440052 | NR | NR | 1.1 | NR | [1.06-1.14] | 7.00E-11 | [162] |
| | rs17336368 | <i>SUPT3H</i> | 6:44783931 | NR | NR | 1.09 | NR | [1.06-1.13] | 7.00E-11 | [162] |
| | rs112215522 | <i>NR</i> | 6:94203856 | NR | NR | 1.09 | NR | [1.058-1.127] | 9.00E-11 | [162] |
| | rs6494598 | <i>GREM1, SCG5</i> | 15:32703267 | NR | NR | 1.22 | NR | [1.188-1.256] | 9.00E-11 | [162] |
| | rs2476023 | <i>CRB1</i> | 1:197381909 | NR | NR | 1.26 | NR | [1.22-1.31] | 9.00E-11 | [162] |
| | rs10504499 | <i>EYA1</i> | 8:71124669 | NR | NR | 1.29 | NR | [1.240-1.346] | 9.00E-11 | [162] |
| | rs72678242 | <i>LINC02331</i> | 14:53788792 | NR | NR | 1.27 | NR | [1.22-1.32] | 1.00E-10 | [162] |
| | rs17479393 | <i>TEX41</i> | 2:144895720 | NR | NR | 1.2 | NR | [1.17-1.24] | 1.00E-10 | [162] |
| | rs10175706 | <i>LINC01965</i> | 2:104015356 | NR | NR | 1.17 | NR | [1.14-1.21] | 1.00E-10 | [162] |
| | rs6028446 | <i>NR</i> | 20:39472902 | NR | NR | 1.15 | NR | [1.12-1.18] | 1.00E-10 | [162] |
| | rs13035389 | <i>RNU7-147P, PLCL1</i> | 2:198801387 | NR | NR | 1.14 | NR | [1.107-1.171] | 1.00E-10 | [162] |
| | rs59156997 | <i>LINC01117</i> | 2:176507119 | NR | NR | 1.2 | NR | [1.15-1.25] | 1.00E-10 | [162] |
| | rs4237150 | <i>GLIS3</i> | 9:4290085 | NR | NR | 1.14 | NR | [1.1-1.17] | 2.00E-10 | [162] |
| | rs4674676 | <i>FARSB, MOGAT1</i> | 2:222664393 | NR | NR | 1.19 | NR | [1.14-1.24] | 2.00E-10 | [162] |
| | rs17275866 | <i>LINC02268</i> | 4:174150335 | NR | NR | 1.14 | NR | [1.11-1.18] | 2.00E-10 | [162] |
| | rs55700449 | <i>ZNF536</i> | 19:30491258 | NR | NR | 1.18 | NR | [1.13-1.22] | 2.00E-10 | [162] |

| | | | | | | | | | | |
|-----------------|-------------|---------------------------------|--------------|----|----|------|----|---------------|----------|-------|
| | rs12509218 | <i>VEGFC</i> | 4:176666086 | NR | NR | 1.19 | NR | [1.14-1.25] | 2.00E-10 | [162] |
| | rs11688237 | <i>Y RNA, ARHGAP15</i> | 2:143802452 | NR | NR | 1.12 | NR | [1.09-1.15] | 2.00E-10 | [162] |
| | rs7243821 | <i>CCDC68</i> | 18:54988301 | NR | NR | 1.13 | NR | [1.096-1.165] | 2.00E-10 | [162] |
| | rs11650175 | <i>CEP112</i> | 17:65747532 | NR | NR | 1.12 | NR | [1.09-1.16] | 2.00E-10 | [162] |
| | rs2073323 | <i>TASP1</i> | 20:13533787 | NR | NR | 1.13 | NR | [1.094-1.165] | 3.00E-10 | [162] |
| | rs4868444 | <i>MSX2, MIR4634</i> | 5:174733110 | NR | NR | 1.19 | NR | [1.134-1.242] | 3.00E-10 | [162] |
| | rs11768577 | <i>SEM1</i> | 7:96514492 | NR | NR | 1.35 | NR | [1.303-1.402] | 3.00E-10 | [162] |
| | rs1766786 | <i>TBX15</i> | 1:118909877 | NR | NR | 1.18 | NR | [1.13-1.23] | 3.00E-10 | [162] |
| | rs10962767 | <i>RN7SL720P, BNC2</i> | 9:16958465 | NR | NR | 1.11 | NR | [1.08-1.14] | 3.00E-10 | [162] |
| | rs73168105 | <i>LINC00540</i> | 13:22139569 | NR | NR | 1.15 | NR | [1.107-1.193] | 3.00E-10 | [162] |
| | rs6740960 | <i>C2orf91</i> | 2:41954539 | NR | NR | 1.12 | NR | [1.084-1.151] | 3.00E-10 | [162] |
| | rs7167736 | <i>ASB7</i> | 15:100666433 | NR | NR | 1.14 | NR | [1.1-1.18] | 3.00E-10 | [162] |
| | rs10078545 | <i>MIR3977, RPL5P16</i> | 5:82828371 | NR | NR | 1.11 | NR | [1.080-1.145] | 3.00E-10 | [162] |
| | rs11713363 | <i>RSRC1</i> | 3:158110533 | NR | NR | 1.12 | NR | [1.09-1.16] | 3.00E-10 | [162] |
| | rs199880074 | <i>LINC01331</i> | 5:74187296 | NR | NR | 1.12 | NR | [1.08-1.16] | 4.00E-10 | [162] |
| | rs56347314 | <i>CASC17</i> | 17:71126965 | NR | NR | 1.11 | NR | [1.076-1.140] | 4.00E-10 | [162] |
| | rs80067372 | <i>TNFSF12-TNFSF13, TNESE12</i> | 17:7549435 | NR | NR | 1.12 | NR | [1.080-1.150] | 4.00E-10 | [162] |
| | rs12505328 | <i>RNU6-1096P, HAND2</i> | 4:173456853 | NR | NR | 1.11 | NR | [1.074-1.139] | 4.00E-10 | [162] |
| | rs11589479 | <i>ADAM15</i> | 1:155060832 | NR | NR | 1.13 | NR | [1.090-1.173] | 4.00E-10 | [162] |
| | rs2133593 | <i>LINC00578</i> | 3:177584204 | NR | NR | 1.11 | NR | [1.07-1.14] | 4.00E-10 | [162] |
| | rs12541121 | <i>HAS2-AS1, MRPS36P3</i> | 8:122089504 | NR | NR | 1.1 | NR | [1.064-1.127] | 4.00E-10 | [162] |
| | rs7161418 | <i>LINC02279, DICER1</i> | 14:95013552 | NR | NR | 1.11 | NR | [1.070-1.143] | 4.00E-10 | [162] |
| | rs1336149 | <i>ARHGEF11</i> | 1:156969383 | NR | NR | 1.09 | NR | [1.062-1.125] | 4.00E-10 | [162] |
| | rs2347498 | <i>NRG1</i> | 8:32495664 | NR | NR | 1.09 | NR | [1.06-1.13] | 4.00E-10 | [162] |
| | rs11001765 | <i>LRMDA</i> | 10:76390527 | NR | NR | 1.13 | NR | [1.09-1.18] | 4.00E-10 | [162] |
| | rs12495832 | <i>LINC02032, HNRNPA1P20</i> | 3:148111690 | NR | NR | 1.15 | NR | [1.1-1.2] | 4.00E-10 | [162] |
| | rs141753469 | <i>MIR6074, HMGA2</i> | 12:66003386 | NR | NR | 1.11 | NR | [1.072-1.151] | 5.00E-10 | [162] |
| | rs145365164 | <i>LINC02379</i> | 4:126033497 | NR | NR | 1.11 | NR | [1.070-1.148] | 5.00E-10 | [162] |
| | rs4958741 | <i>CIRIPI1, HAND1</i> | 5:154488702 | NR | NR | 1.11 | NR | [1.069-1.147] | 5.00E-10 | [162] |
| Chin morphology | rs4915551 | <i>DENND1B</i> | 1:197539771 | NR | NR | NR | NR | NR | 5.00E-10 | [160] |

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|-----------------|---------------|---------------------------------|-------------|----|------|----|---------------|----|----------|-------|
| Segment 12 | rs58687115 | <i>SLC6A15, RPL6P25</i> | 12:83805950 | C | 0.49 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 18 | rs114777090 | <i>DPY19L2P2</i> | 7:103261242 | NR | NR | NR | NR | NR | 4.00E-08 | [163] |
| Segment 24 | rs79037251 | <i>LINC01376</i> | 2:19303254 | T | 0.15 | NR | NR | NR | 5.00E-08 | [169] |
| | rs10178696 | <i>LINC01117</i> | 2:176500891 | A | 0.27 | NR | NR | NR | 5.00E-08 | [169] |
| | rs112087864 | <i>THSD4</i> | 15:71568638 | T | 0.31 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 25 | rs3910659 | <i>STX18</i> | 4:4536189 | G | 0.17 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 26 | rs9899183 | <i>TNFSF12, TNFSF12-TNFSF13</i> | 17:7549660 | C | 0.26 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 27 | rs13035645 | <i>MIR4432HG</i> | 2:60406328 | A | 0.26 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 4 | chr10:1582881 | NR | Mapping not | NR | NR | NR | NR | NR | 4.00E-08 | [163] |
| Segment 48 | rs17023457 | <i>LINC01780</i> | 1:119333107 | C | 0.18 | NR | NR | NR | 5.00E-08 | [169] |
| | rs2245221 | <i>TRPS1</i> | 8:115612652 | G | 0.43 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 49 | rs9893705 | <i>BCAS3</i> | 17:61192194 | T | 0.19 | NR | NR | NR | 4.00E-08 | [169] |
| | rs11675008 | <i>LINC02831, LINC01812</i> | 2:67689743 | A | 0.38 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 51 | rs577676 | <i>PRRX1, GORAB</i> | 1:170618199 | T | 0.46 | NR | NR | NR | 5.00E-08 | [169] |
| | rs7513680 | <i>PSMC1P12, RNA5SP56</i> | 1:118608345 | C | 0.39 | NR | NR | NR | 5.00E-08 | [169] |
| | rs2760734 | <i>SMG6</i> | 17:2124350 | T | 0.17 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 53 | rs13035389 | <i>RNU7-147P, PLCL1</i> | 2:198801387 | C | 0.45 | NR | NR | NR | 5.00E-08 | [169] |
| | rs9388518 | <i>RPS4XP9, RSPO3</i> | 6:126782640 | A | 0.44 | NR | NR | NR | 5.00E-08 | [169] |
| | rs148375239 | <i>SCG5, GREM1-AS1</i> | 15:32710663 | T | 0.47 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 54 | rs4296976 | <i>SEMI</i> | 7:96527536 | C | 0.28 | NR | NR | NR | 5.00E-08 | [169] |
| Segment 6 | rs56081252 | <i>EPHB3, MAGEF1</i> | 3:184658160 | A | 0.35 | NR | NR | NR | 5.00E-08 | [169] |
| Chin protrusion | rs3827760 | <i>EDAR</i> | 2:108897145 | G | NR | NR | 0.0076 NR de- | NR | 1.00E-79 | [158] |