**S4. Descriptions of variables used and statistical tests performed in manuscript: "Childhood ecology influences salivary testosterone and pubertal age of Bangladeshi UK migrant men"**

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| **S4.1 Definitions of variable names in the dataset for manuscript: "Childhood ecology influences salivary testosterone and pubertal age of Bangladeshi UK migrant men"** | |
| Variable name | Definition |
| PartNum | Participant ID code |
| residence16 | categorical variable separating men by residential, developmental and ethnic characteristics: "Bangladeshi sedentees"(SED), "Adult migrants"(ADU), "Child migrants"(CHI), "Second generation migrants"(2NG), "British European"(EUR). Child migrants are classified by age at migration ≤16 |
| residence18 | categorical variable separating men by residential, developmental and ethnic characteristics: "Bangladeshi sedentees"(SED), "Adult migrants"(ADU), "Child migrants"(CHI), "Second generation migrants"(2NG), "British European"(EUR). Child migrants are classified by age at migration ≤18 |
| AgeMigUK | Age at migration (years) |
| NumYearsUK | Number of years in the UK (AgeMigUK - AgeRecruit) |
| AgeRecruit | Age at recruitment (years) |
| Height | Height (cm) |
| Weight | Weight (kg) |
| BMI | Body Mass Index: kg/m2 |
| MssBMI | for BMI missing data, imputed from the overall population mean BMI value (24.07) |
| MeanS1D1D2 | Average waking salivary testosterone, sampled <30min following waking over two nonconsecutive days |
| MeanS3D1D2 | Average evening salivary testosterone, sampled prior to bed over two nonconsecutive days |
| PubVoice.n | Recalled age (years) at which voice first broke |
| PubShave.n | Recalled age (years) at which shaving first began |
| PubPub.n | Recalled age (years) at which pubic hair first appeared |
| PubNE.n | Recalled age (years) at which first nocturnal emmission |
| pub.compos | Average of recalled pubertal milestones (years) |
| age.8.16.mig | categorical variable separating migrants by age at migration cohorts: >16y; 9-16y; Birth-9y; Pre-Birth (Born UK) |
| age.8.18.mig | categorical variable separating child migrants by age at migration cohorts: >18y; 9-18y; Birth-9y; Pre-Birth (Born UK) |
| age.8b.18.mig | categorical variable separating child migrants by age at migration cohorts: >18y; 9-18y; Pre-Birth (Born UK)-9y |
| z.log.meanS1D1D2 | natural logorithm of MeanS1D1D2 in SD units |
| z.log.meanS3D1D2 | natural logorithm of MeanS3D1D2 in SD units |
| z.log.meanS1S3D1D2 | natural logorithm of daily average salivary testosterone, in SD units |
| z.log.age | natural logorithm of AgeRecruit, in SD units |
| z.AgeMigUK | Age at migration (SD) |
| z.height | Height (SD) |
| z.bmi | BMI (SD) |
| z.mssbmi | MssBMI (SD) |
| z.pub.voice | PubVoice.n (SD) |
| z.pub.shave | PubShave.n (SD) |
| z.pub.pub | PubPub.n (SD) |
| z.pub.ne | PubNE.n (SD) |
| z.pub.compos | pub.compos (SD) |

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| **S4.2 Description of hypotheses tested in the dataset for manuscript: "Childhood ecology influences salivary testosterone and pubertal age of Bangladeshi UK migrant men "** | | | |
| Hypotheses/  Tests | Prediction/design | Dependent varaible | Covariates |
| 1 | *Cohorts separated by ethnicity and developmental exposure to ecological conditions will differ in salivary testosterone* |  |  |
| 1.1 |  | z.log salivary testosterone | Residence groups (CHI ≤16), z.age, z.bmi |
| 1.2 |  | z.log salivary testosterone | z.age at migration, z.log.age, z.bmi |
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| 2 | *Childhood migration leads to differences in salivary testostoerone (analysis restricted to CHI ≤16)* |  |  |
| 2.1 | *Continuous within CHI, including age and BMI* |  |  |
| 2.1.1 |  | z.log salivary testosterone | z.age at migration, z.log.age, z.bmi |
| 2.1.2 |  | z.log salivary testosterone | z.age at migration, z.log.age, z.bmi(imputed) |
| 2.2 | *Continuous within CHI, including number of years in the UK and bmi* |  |  |
| 2.2.1 |  | z.log salivary testosterone | z.age at migration, NumYearsUK, z.bmi |
| 2.2.2 |  | z.log salivary testosterone | z.age at migration, NumYearsUK, z.bmi(imputed) |
| 2.3 | *Cohorts split at age migration 8years, including age at recruitment and BMI* |  |  |
| 2.3.1 |  | z.log salivary testosterone | CHI ≤8 versus CHI 9-16, z.log.age, z.bmi |
| 2.3.2 |  | z.log salivary testosterone | CHI ≤8 versus CHI 9-16, z.log.age, z.bmi(imputed) |
| 2.4 | *Cohorts split at age migration 8years, including number of years in the UK and BMI* |  |  |
| 2.4.1 |  | z.log salivary testosterone | CHI ≤8 versus CHI 9-16, NumYearsUK, z.bmi |
| 2.4.2 |  | z.log salivary testosterone | CHI ≤8 versus CHI 9-16, NumYearsUK, z.bmi(imputed) |
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| 3 | *Adult migration leads to differences in salivary testosterone (analysis restricted to ADU)* |  |  |
| 3.1 | *Continuous within ADU, including number of years in the UK and BMI* |  |  |
| 3.1.1 |  | z.log salivary testosterone | NumYearsUK, z.bmi |
| 3.2 | *Continuous within ADU split at age migration 40 years, including number of years in the UK and BMI* |  |  |
| 3.2.1 |  | z.log salivary testosterone | ADU(<40 only)NumYearsUK, z.bmi |
| 3.2.2 |  | z.log salivary testosterone | ADU(>40 only)NumYearsUK, z.bmi |
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| 4 | *Residence group characteristics lead to differences in salivary testosterone aging profile. Note: untransformed salivary testosterone to assess slopes in pg/ml per year, results with transformed units not shown, but not different in interpretation* |  |  |
| 4.1 | *Age at recruitment continuous predictor of salivary testosterone across all populations* |  |  |
| 4.1.1 |  | salivary testosterone | age at recruitment |
| 4.2 | *Age of recruitment by salivary testosterone slopes significantly differ between residence groups* |  |  |
| 4.2.1 |  | salivary testosterone | Residence groups, age at recruitment |
| 4.3 | *Age at recruitment continuous predictor of salivary testosterone within residence groups (separate analysis within each group)* |  |  |
| 4.3.1 |  | salivary testosterone | age at recruitment (repeated for SED, ADU, CHI, 2NG, EUR) |
| 4.4 | *Age of recruitment by salivary testosterone slopes significantly differ between residence groups showing decline (all UK residence groups)* |  |  |
| 4.4.1 |  | salivary testosterone | age at recruitment (analysis restricted to ADU, CHI, 2NG, EUR) |
| 4.5 | *is there a sig effect of aging on salivary testosterone in UK-born men, when not considering residence group? If so, does this explain differences in waking salT found between 2NG and EUR* |  |  |
| 4.5.1 |  | salivary testosterone | age at recruitment (analysis restricted to 2NG, EUR) |
| 4.5.2 |  | salivary testosterone (adjusted for age-decline) | age at recruitment (analysis restricted to 2NG, EUR) |
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| 5 | *Cohorts separated by ethnicity and developmental exposure to ecological conditions will differ in recalled markers of age at puberty* |  |  |
| 5.1 | *Age at puberty differs by residence group* |  |  |
| 5.1.1 |  | Recalled age at puberty measures | Residence group, z.log.age |
| 5.2 | *Continuous age at childhood migration leads to differences in recalled age at puberty (analysis restricted to CHI ≤18)* |  |  |
| 5.2.1 |  | Recalled age at puberty measures | AgeMigUK |
| 5.2.2 |  | Recalled age at puberty measures | AgeMigUK, z.log.age |
| 5.3 | *Age at childhood migration leads to differences in recalled age at puberty between cohorts of CHI ≤18, split at age migration 8years, including 2NG* |  |  |
| 5.3.1 |  | Recalled age at puberty measures | Migration cohorts: >18y, 9-18y, Birth-9y Pre-Birth (Born UK), z.log.age |
| 5.3.2 |  | Recalled age at puberty measures | Migration cohorts: >18y, 9-18y, Pre-Birth (Born UK)-9y, z.log.age |
| 5.4 | *Continuous age at adult migration (<18.4) leads to differences in recalled age of migration, including age at recruitment (analysis restricted to ADU <18.4)* |  |  |
| 5.4.1 |  | Recalled age at puberty measures | AgeMigUK, z.log.age |
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| 6 | *Men with higher adult salivary T recall earlier age at puberty, including age at recruitment to adjust for demographic trends or recall bias* |  |  |
| 6.1 | *Across all groups, without separation by ethnicity or developmental exposure to ecological conditions* |  |  |
| 6.1.1 |  | Recalled age at puberty | salivary testosterone, z.log.age |
| 6.2 | *Restricting analysis within Bangladeshi men resident in the UK* |  |  |
| 6.2.1 |  | Recalled age at puberty | salivary testosterone, z.log.age |
| 6.3 | *Restricting analysis within men resident in Bangladesh* |  |  |
| 6.3.1 |  | Recalled age at puberty | salivary testosterone, z.log.age |