Electronic supplement

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This document contains supplemental figures and tables accompanying the article “Social ageing varies within a population of northern bottlenose whales”.

# Supplementary figures

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| Figure S1 – Effects of minimum age on group size in male (A) and female (B) northern bottlenose whales. Coloured lines represent within-individual effects fit with a random slopes model while the black dashed line represents between-individual effects. Panel C shows the 90% probability intervals of the posteriors of both between and within-individual effects by sex. Grey points represent raw data so may not reflect fitted lines. |

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| Figure S2 – Effects of minimum age on social network strength in male (A) and female (B) northern bottlenose whales. Coloured lines represent within-individual effects fit with a random slopes model while the black dashed line represents between-individual effects. Panel C shows the 90% probability intervals of the posteriors of both between and within-individual effects by sex. Grey points represent raw data so may not reflect fitted lines. |

# Principal components analysis

**Table S1** – Loadings of principal component analysis.

| Measure | PC1 | PC2 | PC3 | PC4 | PC5 |
| --- | --- | --- | --- | --- | --- |
| Change in number of social partners | 0.38 | -0.57 | 0.12 | 0.67 | -0.24 |
| Change in network centrality | 0.55 | 0.30 | 0.32 | -0.34 | -0.62 |
| Change in group size | 0.32 | -0.53 | -0.59 | -0.52 | 0.02 |
| Change in mean bond strength | 0.27 | 0.54 | -0.69 | 0.40 | -0.08 |
| Change in network strength | 0.61 | 0.14 | 0.25 | -0.01 | 0.74 |

# Numerical summaries of social ageing models

## Male group size

**Table S2** – Results of model explaining group size in male northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 1.28 | 0.13 | 1.05 | 1.49 |
| meanMinAge | -0.01 | 0.01 | -0.02 | 0.00 |
| deltaMinAge | -0.00 | 0.01 | -0.02 | 0.02 |
| sd(Intercept) | 0.25 | 0.03 | 0.20 | 0.31 |
| sd(deltaMinAge) | 0.04 | 0.01 | 0.03 | 0.06 |
| cor(Intercept,deltaMinAge) | 0.58 | 0.24 | 0.16 | 0.92 |
| sd(Intercept) | 0.35 | 0.08 | 0.24 | 0.50 |

## Female group size

**Table S3** – Results of model explaining group size in female northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 1.14 | 0.11 | 0.95 | 1.32 |
| meanMinAge | 0.00 | 0.00 | -0.00 | 0.01 |
| deltaMinAge | 0.01 | 0.02 | -0.02 | 0.04 |
| sd(Intercept) | 0.14 | 0.04 | 0.08 | 0.19 |
| sd(deltaMinAge) | 0.10 | 0.02 | 0.07 | 0.13 |
| cor(Intercept,deltaMinAge) | -0.22 | 0.25 | -0.62 | 0.21 |
| sd(Intercept) | 0.36 | 0.09 | 0.25 | 0.52 |

## Male number of social partners

**Table S4** – Results of model explaining number of social partners in male northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 0.99 | 0.22 | 0.63 | 1.36 |
| numSamplingPeriodsByYear | 0.29 | 0.03 | 0.25 | 0.34 |
| meanMinAge | -0.01 | 0.01 | -0.04 | 0.01 |
| deltaMinAge | 0.01 | 0.02 | -0.02 | 0.05 |
| sd(Intercept) | 0.41 | 0.06 | 0.32 | 0.52 |
| sd(deltaMinAge) | 0.05 | 0.02 | 0.02 | 0.09 |
| cor(Intercept,deltaMinAge) | -0.04 | 0.32 | -0.54 | 0.50 |
| sd(Intercept) | 0.44 | 0.13 | 0.28 | 0.69 |

## Female number of social partners

**Table S5** – Results of model explaining number of social partners in female northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 0.86 | 0.24 | 0.47 | 1.24 |
| numSamplingPeriodsByYear | 0.28 | 0.03 | 0.23 | 0.32 |
| meanMinAge | -0.00 | 0.01 | -0.02 | 0.01 |
| deltaMinAge | 0.00 | 0.02 | -0.03 | 0.04 |
| sd(Intercept) | 0.32 | 0.06 | 0.23 | 0.41 |
| sd(deltaMinAge) | 0.08 | 0.02 | 0.05 | 0.12 |
| cor(Intercept,deltaMinAge) | -0.29 | 0.28 | -0.72 | 0.20 |
| sd(Intercept) | 0.59 | 0.17 | 0.37 | 0.90 |

## Male network strength

**Table S6** – Results of model explaining number of social partners in male northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 0.48 | 0.17 | 0.20 | 0.75 |
| numSamplingPeriodsByYear | 0.16 | 0.02 | 0.13 | 0.19 |
| meanMinAge | -0.01 | 0.01 | -0.02 | -0.00 |
| deltaMinAge | 0.00 | 0.01 | -0.02 | 0.02 |
| sd(Intercept) | 0.08 | 0.05 | 0.01 | 0.16 |
| sd(deltaMinAge) | 0.02 | 0.01 | 0.00 | 0.04 |
| cor(Intercept,deltaMinAge) | -0.32 | 0.53 | -0.96 | 0.74 |
| sd(Intercept) | 0.45 | 0.13 | 0.28 | 0.69 |

## Female network strength

**Table S7** – Results of model explaining social network strength in female northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 0.23 | 0.18 | -0.06 | 0.51 |
| numSamplingPeriodsByYear | 0.19 | 0.02 | 0.16 | 0.23 |
| meanMinAge | -0.00 | 0.00 | -0.01 | 0.01 |
| deltaMinAge | 0.01 | 0.01 | -0.01 | 0.03 |
| sd(Intercept) | 0.08 | 0.05 | 0.01 | 0.17 |
| sd(deltaMinAge) | 0.01 | 0.01 | 0.00 | 0.03 |
| cor(Intercept,deltaMinAge) | -0.01 | 0.56 | -0.88 | 0.88 |
| sd(Intercept) | 0.45 | 0.13 | 0.29 | 0.69 |

## Male network centrality

**Table S8** – Results of model explaining social network centrality in male northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -1.56 | 0.27 | -2.00 | -1.13 |
| numSamplingPeriodsByYear | 0.37 | 0.05 | 0.30 | 0.45 |
| meanMinAge | -0.03 | 0.01 | -0.06 | -0.01 |
| deltaMinAge | -0.05 | 0.03 | -0.10 | -0.01 |
| sd(Intercept) | 0.26 | 0.12 | 0.05 | 0.45 |
| sd(deltaMinAge) | 0.07 | 0.04 | 0.01 | 0.13 |
| cor(Intercept,deltaMinAge) | -0.60 | 0.42 | -0.98 | 0.36 |
| sd(Intercept) | 0.55 | 0.17 | 0.33 | 0.87 |

## Female network centrality

**Table S9** – Results of model explaining social network centrality in female northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -1.82 | 0.30 | -2.31 | -1.33 |
| numSamplingPeriodsByYear | 0.44 | 0.05 | 0.36 | 0.52 |
| meanMinAge | -0.01 | 0.01 | -0.02 | 0.01 |
| deltaMinAge | -0.01 | 0.02 | -0.05 | 0.03 |
| sd(Intercept) | 0.33 | 0.14 | 0.07 | 0.54 |
| sd(deltaMinAge) | 0.03 | 0.02 | 0.00 | 0.07 |
| cor(Intercept,deltaMinAge) | -0.03 | 0.55 | -0.88 | 0.88 |
| sd(Intercept) | 0.72 | 0.21 | 0.45 | 1.09 |

## Male mean relationship strength

**Table S10** – Results of model explaining mean bond strength in male northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -1.14 | 0.16 | -1.40 | -0.87 |
| numSamplingPeriodsByYear | 0.03 | 0.02 | -0.00 | 0.07 |
| meanMinAge | -0.00 | 0.01 | -0.01 | 0.01 |
| deltaMinAge | 0.01 | 0.01 | -0.02 | 0.03 |
| sd(Intercept) | 0.07 | 0.05 | 0.01 | 0.16 |
| sd(deltaMinAge) | 0.01 | 0.01 | 0.00 | 0.03 |
| cor(Intercept,deltaMinAge) | 0.03 | 0.57 | -0.89 | 0.89 |
| sd(Intercept) | 0.42 | 0.13 | 0.26 | 0.65 |

## Female mean relationship strength

**Table S11** – Results of model explaining mean bond strength in female northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -1.32 | 0.15 | -1.57 | -1.08 |
| numSamplingPeriodsByYear | 0.08 | 0.02 | 0.04 | 0.12 |
| meanMinAge | 0.00 | 0.00 | -0.01 | 0.01 |
| deltaMinAge | 0.03 | 0.01 | 0.00 | 0.05 |
| sd(Intercept) | 0.09 | 0.06 | 0.01 | 0.19 |
| sd(deltaMinAge) | 0.04 | 0.02 | 0.01 | 0.07 |
| cor(Intercept,deltaMinAge) | -0.15 | 0.54 | -0.91 | 0.81 |
| sd(Intercept) | 0.33 | 0.10 | 0.21 | 0.53 |

# Robustness check: Individuals with genetically confirmed sex

## Male group size (genetic sex only)

**Table S12** – Results of model explaining group size in male northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 1.46 | 0.25 | 1.06 | 1.86 |
| meanMinAge | -0.02 | 0.01 | -0.04 | -0.00 |
| deltaMinAge | -0.02 | 0.03 | -0.06 | 0.03 |
| sd(Intercept) | 0.32 | 0.10 | 0.19 | 0.50 |
| sd(deltaMinAge) | 0.06 | 0.03 | 0.03 | 0.11 |
| cor(Intercept,deltaMinAge) | 0.54 | 0.33 | -0.09 | 0.95 |
| sd(Intercept) | 0.49 | 0.13 | 0.32 | 0.72 |

## Female group size (genetic sex only)

**Table S13** – Results of model explaining group size in female northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 1.14 | 0.17 | 0.86 | 1.40 |
| meanMinAge | 0.01 | 0.01 | -0.00 | 0.02 |
| deltaMinAge | 0.00 | 0.04 | -0.07 | 0.07 |
| sd(Intercept) | 0.12 | 0.09 | 0.01 | 0.29 |
| sd(deltaMinAge) | 0.10 | 0.05 | 0.04 | 0.19 |
| cor(Intercept,deltaMinAge) | -0.07 | 0.55 | -0.90 | 0.85 |
| sd(Intercept) | 0.39 | 0.12 | 0.24 | 0.60 |

## Male number of social partners (genetic sex only)

**Table S14** – Results of model explaining number of social partners in male northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 1.17 | 0.45 | 0.41 | 1.87 |
| numSamplingPeriodsByYear | 0.23 | 0.05 | 0.15 | 0.31 |
| meanMinAge | -0.01 | 0.02 | -0.05 | 0.03 |
| deltaMinAge | -0.02 | 0.05 | -0.09 | 0.06 |
| sd(Intercept) | 0.48 | 0.16 | 0.27 | 0.76 |
| sd(deltaMinAge) | 0.06 | 0.04 | 0.01 | 0.13 |
| cor(Intercept,deltaMinAge) | 0.27 | 0.47 | -0.58 | 0.93 |
| sd(Intercept) | 0.79 | 0.27 | 0.45 | 1.29 |

## Female number of social partners (genetic sex only)

**Table S15** – Results of model explaining number of social partners in female northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -0.04 | 0.56 | -0.96 | 0.85 |
| numSamplingPeriodsByYear | 0.53 | 0.12 | 0.35 | 0.72 |
| meanMinAge | 0.02 | 0.02 | -0.01 | 0.05 |
| deltaMinAge | 0.01 | 0.07 | -0.10 | 0.11 |
| sd(Intercept) | 0.47 | 0.21 | 0.21 | 0.86 |
| sd(deltaMinAge) | 0.11 | 0.05 | 0.04 | 0.21 |
| cor(Intercept,deltaMinAge) | -0.24 | 0.46 | -0.87 | 0.60 |
| sd(Intercept) | 0.85 | 0.28 | 0.50 | 1.38 |

## Male network strength (genetic sex only)

**Table S16** – Results of model explaining number of social partners in male northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 0.64 | 0.27 | 0.19 | 1.06 |
| numSamplingPeriodsByYear | 0.11 | 0.04 | 0.05 | 0.17 |
| meanMinAge | -0.01 | 0.01 | -0.03 | 0.01 |
| deltaMinAge | 0.00 | 0.03 | -0.04 | 0.05 |
| sd(Intercept) | 0.18 | 0.10 | 0.03 | 0.35 |
| sd(deltaMinAge) | 0.02 | 0.02 | 0.00 | 0.06 |
| cor(Intercept,deltaMinAge) | -0.18 | 0.56 | -0.94 | 0.81 |
| sd(Intercept) | 0.55 | 0.18 | 0.33 | 0.87 |

## Female network strength (genetic sex only)

**Table S17** – Results of model explaining social network strength in female northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 0.17 | 0.26 | -0.26 | 0.59 |
| numSamplingPeriodsByYear | 0.20 | 0.05 | 0.12 | 0.29 |
| meanMinAge | 0.01 | 0.01 | -0.01 | 0.02 |
| deltaMinAge | 0.00 | 0.03 | -0.05 | 0.05 |
| sd(Intercept) | 0.12 | 0.09 | 0.01 | 0.29 |
| sd(deltaMinAge) | 0.03 | 0.03 | 0.00 | 0.08 |
| cor(Intercept,deltaMinAge) | 0.10 | 0.55 | -0.85 | 0.92 |
| sd(Intercept) | 0.55 | 0.18 | 0.33 | 0.87 |

## Male network centrality (genetic sex only)

**Table S18** – Results of model explaining social network centrality in male northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -1.30 | 0.52 | -2.14 | -0.48 |
| numSamplingPeriodsByYear | 0.28 | 0.08 | 0.15 | 0.41 |
| meanMinAge | -0.03 | 0.03 | -0.08 | 0.01 |
| deltaMinAge | -0.08 | 0.05 | -0.16 | 0.01 |
| sd(Intercept) | 0.54 | 0.20 | 0.26 | 0.90 |
| sd(deltaMinAge) | 0.05 | 0.04 | 0.00 | 0.13 |
| cor(Intercept,deltaMinAge) | -0.27 | 0.56 | -0.96 | 0.79 |
| sd(Intercept) | 0.69 | 0.25 | 0.39 | 1.15 |

## Female network centrality (genetic sex only)

**Table S19** – Results of model explaining social network centrality in female northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -2.21 | 0.46 | -2.96 | -1.47 |
| numSamplingPeriodsByYear | 0.40 | 0.10 | 0.24 | 0.56 |
| meanMinAge | 0.01 | 0.01 | -0.01 | 0.03 |
| deltaMinAge | 0.00 | 0.05 | -0.09 | 0.09 |
| sd(Intercept) | 0.23 | 0.17 | 0.02 | 0.54 |
| sd(deltaMinAge) | 0.06 | 0.05 | 0.01 | 0.15 |
| cor(Intercept,deltaMinAge) | 0.17 | 0.55 | -0.81 | 0.93 |
| sd(Intercept) | 0.79 | 0.26 | 0.45 | 1.26 |

## Female mean relationship strength

**Table S20** – Results of model explaining mean bond strength in male northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -1.23 | 0.27 | -1.66 | -0.80 |
| numSamplingPeriodsByYear | -0.01 | 0.05 | -0.09 | 0.06 |
| meanMinAge | -0.00 | 0.01 | -0.02 | 0.02 |
| deltaMinAge | 0.02 | 0.03 | -0.03 | 0.07 |
| sd(Intercept) | 0.19 | 0.12 | 0.03 | 0.40 |
| sd(deltaMinAge) | 0.03 | 0.03 | 0.00 | 0.09 |
| cor(Intercept,deltaMinAge) | -0.01 | 0.55 | -0.87 | 0.88 |
| sd(Intercept) | 0.43 | 0.17 | 0.21 | 0.75 |

## Male mean relationship strength

**Table S21** – Results of model explaining mean bond strength in female northern bottlenose whales as a function of minimum age.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -1.43 | 0.40 | -2.09 | -0.79 |
| numSamplingPeriodsByYear | 0.07 | 0.10 | -0.08 | 0.23 |
| meanMinAge | 0.01 | 0.01 | -0.01 | 0.03 |
| deltaMinAge | -0.01 | 0.05 | -0.09 | 0.06 |
| sd(Intercept) | 0.24 | 0.18 | 0.02 | 0.58 |
| sd(deltaMinAge) | 0.08 | 0.04 | 0.03 | 0.16 |
| cor(Intercept,deltaMinAge) | -0.10 | 0.53 | -0.89 | 0.80 |
| sd(Intercept) | 0.35 | 0.18 | 0.10 | 0.67 |

# Robustness check: Females observed over a span of at least 10 years

## Female group size (obs. spanning 10+ years only)

**Table S22** – Results of model explaining group size in female northern bottlenose whales as a function of minimum age, excluding females detected over a span of less than 10 years.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 1.13 | 0.18 | 0.84 | 1.41 |
| meanMinAge | 0.00 | 0.01 | -0.01 | 0.01 |
| deltaMinAge | -0.02 | 0.02 | -0.06 | 0.02 |
| sd(Intercept) | 0.09 | 0.06 | 0.01 | 0.20 |
| sd(deltaMinAge) | 0.07 | 0.02 | 0.05 | 0.11 |
| cor(Intercept,deltaMinAge) | -0.07 | 0.50 | -0.84 | 0.80 |
| sd(Intercept) | 0.46 | 0.12 | 0.30 | 0.69 |

## Female number of social partners (obs. spanning 10+ years only)

**Table S23** – Results of model explaining number of social partners in female northern bottlenose whales as a function of minimum age, excluding females detected over a span of less than 10 years.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 0.55 | 0.37 | -0.07 | 1.15 |
| numSamplingPeriodsByYear | 0.39 | 0.07 | 0.27 | 0.51 |
| meanMinAge | 0.00 | 0.01 | -0.02 | 0.02 |
| deltaMinAge | -0.03 | 0.03 | -0.08 | 0.02 |
| sd(Intercept) | 0.11 | 0.09 | 0.01 | 0.29 |
| sd(deltaMinAge) | 0.08 | 0.03 | 0.04 | 0.13 |
| cor(Intercept,deltaMinAge) | 0.27 | 0.52 | -0.73 | 0.94 |
| sd(Intercept) | 0.73 | 0.22 | 0.46 | 1.11 |

## Female network strength (obs. spanning 10+ years only)

**Table S24** – Results of model explaining social network strength in female northern bottlenose whales as a function of minimum age, excluding females detected over a span of less than 10 years.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | 0.24 | 0.25 | -0.17 | 0.64 |
| numSamplingPeriodsByYear | 0.19 | 0.04 | 0.12 | 0.27 |
| meanMinAge | -0.00 | 0.01 | -0.01 | 0.01 |
| deltaMinAge | -0.00 | 0.02 | -0.03 | 0.02 |
| sd(Intercept) | 0.12 | 0.07 | 0.01 | 0.25 |
| sd(deltaMinAge) | 0.02 | 0.01 | 0.00 | 0.04 |
| cor(Intercept,deltaMinAge) | 0.28 | 0.51 | -0.71 | 0.94 |
| sd(Intercept) | 0.51 | 0.15 | 0.32 | 0.79 |

## Female network centrality (obs. spanning 10+ years only)

**Table S25** – Results of model explaining social network centrality in female northern bottlenose whales as a function of minimum age, excluding females detected over a span of less than 10 years.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -1.72 | 0.49 | -2.54 | -0.93 |
| numSamplingPeriodsByYear | 0.45 | 0.11 | 0.28 | 0.62 |
| meanMinAge | -0.01 | 0.02 | -0.04 | 0.01 |
| deltaMinAge | -0.05 | 0.03 | -0.10 | -0.00 |
| sd(Intercept) | 0.32 | 0.17 | 0.05 | 0.61 |
| sd(deltaMinAge) | 0.03 | 0.02 | 0.00 | 0.07 |
| cor(Intercept,deltaMinAge) | 0.30 | 0.52 | -0.72 | 0.95 |
| sd(Intercept) | 0.77 | 0.23 | 0.47 | 1.19 |

## Female mean relationship strength (obs. spanning 10+ years only)

**Table S26** – Results of model explaining mean bond strength in female northern bottlenose whales as a function of minimum age, excluding females detected over a span of less than 10 years.

| Term | Estimate | *SE* | PI-Lower | PI-Upper |
| --- | --- | --- | --- | --- |
| Intercept | -1.36 | 0.23 | -1.73 | -0.97 |
| numSamplingPeriodsByYear | 0.08 | 0.06 | -0.02 | 0.17 |
| meanMinAge | 0.00 | 0.01 | -0.01 | 0.01 |
| deltaMinAge | 0.03 | 0.02 | -0.01 | 0.07 |
| sd(Intercept) | 0.06 | 0.05 | 0.00 | 0.16 |
| sd(deltaMinAge) | 0.06 | 0.02 | 0.03 | 0.09 |
| cor(Intercept,deltaMinAge) | -0.05 | 0.55 | -0.90 | 0.86 |
| sd(Intercept) | 0.32 | 0.11 | 0.18 | 0.52 |