Supplementary file 1a.

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| Model Name | Model structure | elpd\_diff |
| M1 | Area-specific $L\_{\infty }\_{j}$, $K\_{j}$ and $t\_{0}$ | 0 |
| M4 | Area-specific $L\_{\infty }\_{j}$ and $K\_{j}$, common $t\_{0}$ | -9.8 |
| M2 | Area-specific $K\_{j}$, common $t\_{0}$ and $L\_{\infty }\_{j}$ | -112 |
| M3 | Area-specific $t\_{0}$ and $L\_{\infty }\_{j}$, common $K\_{j}$ | -152 |
| M7 | Area-specific $L\_{\infty }\_{j}$, common $K\_{j}$ and $t\_{0}$ | -158 |
| M6 | Area-specific $K\_{j}$, common $t\_{0}$ and $L\_{\infty }\_{j}$ | -175 |
| M5\* | Area-specific $t\_{0}$, common $K\_{j}$ and $L\_{\infty }\_{j}$ | -1338 |
| M8\* | Common $t\_{0}$, $K\_{j}$ and $L\_{\infty }\_{j}$ | -2155 |

\* Models did not converge

Supplementary file 1b. Comparison of allometric growth models with common or unique $θ$-parameter (exponent in the allometric growth model), ordered by difference in expected log pointwise density (elpd) from the best model.

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| --- | --- | --- |
| Model Name | Model structure | elpd\_diff |
| M1 | Intercept ($α\_{j\left[i\right],k[i]}$) varying across individuals within cohorts, fixed, area-specific slope ($θ\_{ref}, θ\_{heat})$ | 0 |
| M2 | Intercept ($α\_{j\left[i\right],k[i]}$) varying across individuals within cohorts, “fixed” common slope ($θ)$ | -1.9 |