## intercept\_table

| **Multinomial Outcome** | **Model Term** | **Effect Type** | **Description** | **Effect** | **p-value** |
| --- | --- | --- | --- | --- | --- |
| HKU9-related Beta-CoV | (Intercept) | Intercept | Prevalence at mean covariate values | -3.9 (-4.38, -3.42) | 0\*\*\* |
| Novel Alpha-CoV | (Intercept).1 | Intercept | Prevalence at mean covariate values | -2.4 (-2.7, -2.1) | 0\*\*\* |
| Novel Beta-CoV | (Intercept).2 | Intercept | Prevalence at mean covariate values | -6 (-7.34, -4.66) | 0\*\*\* |

## smooths\_table

| **Model Term** | **Effect Type** | **Description** | **Knots/Levels** | **Effective Degrees of Freedom** | **p-value** | **Minimum Effect Size** | **Maximum Effect Size** | **Evaluated for Rectal Samples Only** | **Evaluated on Dates with Bat Collection Only** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Multinomial Outcome: Novel Alpha-CoV** | | | | | | | | | |
| s(sample\_type):dummy\_rectal1 | Random Effect | Random effect fecal or rectal baseline prevalence differing from intercept | 2 | 0.00 | 0.5156 | -0.00019 (-0.013, 0.013) | 0 (0, 0) | Yes | Yes |
| s(day):sample\_typeFecal | Thin Plate Spline | Long-term nonlinear trend of prevalence in fecal samples | 5 | 2.57 | 0.1733 | -1.2 (-3.4, 0.76) | 2.4 (-0.28, 5) | No | No |
| s(day):sample\_typeRectal | Thin Plate Spline | Long-term nonlinear trend of prevalence in rectal samples | 5 | 1.00 | 0.6887 | -0.15 (-1, 0.85) | 0.15 (-0.85, 1) | Yes | Yes |
| s(day,gender\_age):dummy\_rectal1 | Factor-Spline | Random nonlinear effects of trends in prevalence within gender/age groups varying from the common long-term trend | 25 | 0.00 | 0.9056 | -2e-04 (-0.0084, 0.0087) | 0.00034 (-0.0085, 0.0087) | Yes | Yes |
| s(day\_of\_year):sample\_typeFecal | Cyclic Cubic Spline | Annual nonlinear cyclic trend of prevalence in fecal samples | 5 | 2.25 | 0.0000\*\*\* | -2.6 (-4, -1.3) | 1.9 (1, 2.6) | No | No |
| s(day\_of\_year):sample\_typeRectal | Cyclic Cubic Spline | Annual nonlinear cyclic trend of prevalence in rectal samples | 5 | 1.35 | 0.0484\* | -0.72 (-1.4, -0.027) | 0.56 (-0.016, 1.1) | Yes | Yes |
| s(day\_of\_year,gender\_age):dummy\_rectal1 | Factor-Spline | Random nonlinear effects of trends in prevalence within gender/age groups varying from the common annual cyclic trend | 20 | 0.00 | 0.9000 | -6e-04 (-0.0096, 0.0089) | 0.00078 (-0.007, 0.0085) | Yes | Yes |
| s(fmi\_normalized):dummy\_rectal1 | Thin Plate Spline | Nonlinear effect of bat FMI, normalized within age, sex, and reproductive calss, on prevalence | 5 | 1.00 | 0.0744· | -2 (-3.9, 0.13) | 2.4 (-0.15, 4.7) | Yes | Yes |
| s(reproductive\_condition):dummy\_repro1 | Random Effect | Random effect of prevalence in bats with reproductive conditions (Pregnant, Lactating, Scrotal) varying from intercept | 4 | 0.00 | 0.9113 | -0.00059 (-0.013, 0.013) | 0.00029 (-0.014, 0.015) | Yes | Yes |
| **Multinomial Outcome: HKU9-related Beta-CoV** | | | | | | | | | |
| s.1(sample\_type):dummy\_rectal1 | Random Effect | Random effect fecal or rectal baseline prevalence differing from intercept | 2 | 0.00 | 0.4588 | -7.7e-05 (-0.0055, 0.0052) | 0 (0, 0) | No | No |
| s.1(day):sample\_typeFecal | Thin Plate Spline | Long-term nonlinear trend of prevalence in fecal samples | 5 | 2.34 | 0.0015\*\* | -1.3 (-2, -0.5) | 0.66 (0.29, 1.1) | No | No |
| s.1(day):sample\_typeRectal | Thin Plate Spline | Long-term nonlinear trend of prevalence in rectal samples | 5 | 2.63 | 0.0558· | -0.69 (-1.3, 0.0096) | 0.8 (-0.35, 1.7) | Yes | Yes |
| s.1(day,gender\_age):dummy\_rectal1 | Factor-Spline | Random nonlinear effects of trends in prevalence within gender/age groups varying from the common long-term trend | 25 | 0.00 | 0.8664 | -0.00023 (-0.0048, 0.005) | 0.00014 (-0.0045, 0.0047) | Yes | Yes |
| s.1(day\_of\_year):sample\_typeFecal | Cyclic Cubic Spline | Annual nonlinear cyclic trend of prevalence in fecal samples | 5 | 2.41 | 0.0000\*\*\* | -1.5 (-2.2, -0.8) | 1.4 (0.95, 1.9) | No | No |
| s.1(day\_of\_year):sample\_typeRectal | Cyclic Cubic Spline | Annual nonlinear cyclic trend of prevalence in rectal samples | 5 | 2.07 | 0.0005\*\*\* | -0.59 (-1.4, 0.09) | 0.8 (0.22, 1.4) | Yes | Yes |
| s.1(day\_of\_year,gender\_age):dummy\_rectal1 | Factor-Spline | Random nonlinear effects of trends in prevalence within gender/age groups varying from the common annual cyclic trend | 20 | 0.00 | 0.8028 | -0.00029 (-0.0075, 0.0071) | 4e-04 (-0.0068, 0.0077) | Yes | Yes |
| s.1(fmi\_normalized):dummy\_rectal1 | Thin Plate Spline | Nonlinear effect of bat FMI, normalized within age, sex, and reproductive calss, on prevalence | 5 | 1.00 | 0.1651 | -0.92 (-2, 0.2) | 1.1 (-0.27, 2.4) | Yes | Yes |
| s.1(reproductive\_condition):dummy\_repro1 | Random Effect | Random effect of prevalence in bats with reproductive conditions (Pregnant, Lactating, Scrotal) varying from intercept | 4 | 1.83 | 0.0254\* | -1.6 (-3, -0.36) | 0 (0, 0) | Yes | Yes |
| **Multinomial Outcome: Novel Beta-CoV** | | | | | | | | | |
| s.2(sample\_type):dummy\_rectal1 | Random Effect | Random effect fecal or rectal baseline prevalence differing from intercept | 2 | 0.00 | 0.7581 | -3.3e-05 (-0.01, 0.01) | 0 (0, 0) | Yes | Yes |
| s.2(day):sample\_typeFecal | Thin Plate Spline | Long-term nonlinear trend of prevalence in fecal samples | 5 | 1.00 | 0.9236 | -0.045 (-1.6, 1.6) | 0.029 (-1, 1) | No | No |
| s.2(day):sample\_typeRectal | Thin Plate Spline | Long-term nonlinear trend of prevalence in rectal samples | 5 | 1.00 | 0.5572 | -1.2 (-4.6, 1.9) | 1.2 (-1.9, 4.5) | Yes | Yes |
| s.2(day\_of\_year):sample\_typeFecal | Cyclic Cubic Spline | Annual nonlinear cyclic trend of prevalence in fecal samples | 5 | 2.07 | 0.0000\*\*\* | -3.3 (-4.6, -1.8) | 4.3 (2.4, 6.1) | No | No |
| s.2(day\_of\_year):sample\_typeRectal | Cyclic Cubic Spline | Annual nonlinear cyclic trend of prevalence in rectal samples | 5 | 1.48 | 0.0363\* | -1.6 (-2.9, -0.25) | 2.2 (0.53, 3.8) | Yes | Yes |