

Supplemental Material Table S1. Final models for all antioxidant measures and hypotheses. Variables indicates the main effects considered and any interaction between main effects. Covariates are significant predictors for each measure; uninformative covariates were removed from the models. Final models for each hypothesis were selected using Akaike’s information criterion; ΔAIC_c listed is between final and global models. See main text for reporting of statistics for each model.

| Model | | Main effects, interactions in final model | Covariates | ΔAIC_c |
|---|-----------|---|-------------|----------------|
| <i>Group 1 “Season” females (timepoint) measure</i> | | | | |
| (background) | OXY | season, diet | date | 0.61 |
| (background) | Uric acid | season, diet | N/A | 2.17 |
| (background) | GPx | season, diet | N/A | 1.07 |
| (background) | d-ROMs | season, diet | mass | 0.65 |
| (background, over fall) | OXY | diet, date | N/A | |
| (background, over fall) | GPx | diet, date | N/A | |
| (background, over spring) | OXY | diet, date | N/A | |
| (background, over spring) | GPx | diet, date | N/A | |
| (15-day flight training) | OXY | season, diet, season * diet | mass | 5.57 |
| (15-day flight training) | Uric acid | season, diet | N/A | 5.35 |
| (15-day flight training) | GPx | season, diet | N/A | 3.48 |
| (15-day flight training) | d-ROMs | season, diet | mass | 2.37 |
| (acute) | OXY | season, diet, season * diet | mass | 12.89 |
| (acute) | Uric acid | season, diet | flight time | 5.61 |
| (acute) | GPx | season, diet, season * diet | N/A | 9.05 |
| (acute) | d-ROMs | season, diet, season * diet | mass | 3.20 |
| <i>Group 2 “Reproductive” females (timepoint) measure</i> | | | | |
| (background) | OXY | training, diet | mass, date | Global used |
| (background) | Uric acid | training, diet | N/A | 5.73 |
| (background) | GPx | training, diet | N/A | 6.22 |
| (background) | d-ROMs | training, diet | mass, date | Global used |
| (after recovery – background) | OXY | training, diet | date | 3.04 |
| (after recovery – background) | Uric acid | training, diet | N/A | 4.61 |
| (after recovery – background) | GPx | training, diet | N/A | 6.66 |
| (after recovery – background) | d-ROMs | training, diet | N/A | 4.14 |
| (acute) | OXY | training, diet | N/A | 4.21 |
| (acute) | Uric acid | training, diet | N/A | 6.97 |
| (acute) | GPx | training, diet | N/A | 4.68 |
| (acute) | d-ROMs | training, diet | mass | 2.92 |