

S1 Table. Summary of modifications to LESCA items.

| Q | Original | Students | Non-students |
|----|--|---|---|
| 19 | Beginning a new school experience (beginning college, transferring college etc) | Beginning a new school experience (beginning university, transferring university etc) | Beginning a new work experience |
| 21 | Academic probation / ineligibility | <i>No change</i> | Removed |
| 22 | Being dismissed from dorm or other residence | Being dismissed from halls or other residence | Being asked to vacate house/home |
| 27 | Financial problems concerning school | <i>No change</i> | Financial problems |
| 29 | Conflict with room-mate | <i>No change</i> | Conflict within household |
| 36 | Suspended from team for non-academic reasons | <i>No change</i> | Removed |
| 49 | Being absent from school (classes) because of participation in sport | Being absent from university (classes) because of participation in sport | Being absent from work because of participation in sport |
| 61 | Major change in level of academic performance (doing better or worse) | <i>No change</i> | Major change in level of performance at work (doing better or worse) |
| 62 | Making career decisions (applying to graduate school,interviewing for jobs, etc) | Making career decisions (applying for Masters degree, interviewing for jobs, etc) | Making career decisions (applying for Masters degree, interviewing for jobs, etc) |

S2 Table. All arc strengths greater than 0.3 included in the first network.

| from | to | strength | direction |
|-------------|-------------|----------|-----------|
| nlebase | NLE_1 | 1.00 | 1.00 |
| nlebase | NLE_2 | 1.00 | 1.00 |
| NLE_1 | injured_1 | 1.00 | 1.00 |
| NLE_2 | injured_2 | 1.00 | 1.00 |
| BIS_1 | FFFS_1 | 0.98 | 0.70 |
| FFFS_1 | BIS_1 | 0.98 | 0.30 |
| ind_team | hours | 0.94 | 0.50 |
| hours | ind_team | 0.94 | 0.50 |
| nlebase | RI_1 | 0.84 | 1.00 |
| ind_team | nlebase | 0.78 | 1.00 |
| BIS_2 | FFFS_2 | 0.74 | 0.71 |
| FFFS_2 | BIS_2 | 0.74 | 0.29 |
| gender | stiffness_1 | 0.71 | 1.00 |
| pi | stiffness_1 | 0.57 | 1.00 |
| NLE_1 | BIS_1 | 0.55 | 0.97 |
| BIS_1 | NLE_1 | 0.55 | 0.03 |
| FFFS_1 | BIS_2 | 0.52 | 1.00 |
| clevel | balance_1 | 0.47 | 1.00 |
| injured_2 | stiffness_2 | 0.46 | 0.66 |
| stiffness_2 | injured_2 | 0.46 | 0.34 |
| injured_1 | stiffness_1 | 0.46 | 0.36 |
| stiffness_1 | injured_1 | 0.46 | 0.64 |
| gender | stiffness_2 | 0.43 | 1.00 |
| FFFS_1 | injured_2 | 0.42 | 1.00 |
| hours | injured_1 | 0.42 | 1.00 |
| clevel | RI_2 | 0.42 | 1.00 |
| nlebase | HRV_1 | 0.41 | 1.00 |
| hours | HRV_1 | 0.40 | 1.00 |
| HRV_1 | NLE_2 | 0.39 | 1.00 |
| gender | FFFS_1 | 0.37 | 1.00 |
| injured_2 | HRV_2 | 0.37 | 0.89 |
| NLE_2 | BIS_2 | 0.37 | 0.96 |
| BIS_2 | NLE_2 | 0.37 | 0.04 |
| HRV_2 | injured_2 | 0.37 | 0.11 |
| pi | NLE_2 | 0.36 | 1.00 |
| RI_1 | BIS_1 | 0.36 | 0.41 |
| BIS_1 | RI_1 | 0.36 | 0.59 |
| nlebase | RI_2 | 0.36 | 1.00 |
| injured_1 | balance_1 | 0.36 | 0.70 |
| balance_1 | injured_1 | 0.36 | 0.30 |
| injured_2 | balance_2 | 0.34 | 0.94 |
| balance_2 | injured_2 | 0.34 | 0.06 |
| RI_1 | balance_1 | 0.33 | 0.22 |
| balance_1 | RI_1 | 0.33 | 0.78 |
| gender | FFFS_2 | 0.33 | 1.00 |
| pi | clevel | 0.32 | 0.50 |
| clevel | pi | 0.32 | 0.50 |
| ind_team | FFFS_1 | 0.31 | 1.00 |

S3 Table continued

| from | to | strength | direction |
|----------|----------|----------|-----------|
| BIS_1 | FFFS_2 | 0.31 | 1.00 |
| pi | ind_team | 0.30 | 0.46 |
| ind_team | pi | 0.30 | 0.54 |

S3 Table. All arc strengths greater than 0.3 included in the second network.

| from | to | strength | direction |
|-----------|-----------|----------|-----------|
| BIS | FFFS | 1.00 | 0.76 |
| FFFS | BIS | 1.00 | 0.25 |
| hours | injured | 0.72 | 1.00 |
| injured | stiffness | 0.67 | 1.00 |
| clevel | BIS | 0.60 | 1.00 |
| HRV | FFFS | 0.58 | 0.69 |
| FFFS | HRV | 0.58 | 0.31 |
| gender | stiffness | 0.56 | 1.00 |
| injured | nlec | 0.45 | 1.00 |
| pi | balance | 0.43 | 1.00 |
| pi | injured | 0.38 | 1.00 |
| stiffness | BIS | 0.38 | 0.93 |
| BIS | stiffness | 0.38 | 0.07 |
| RI | BIS | 0.35 | 0.29 |
| BIS | RI | 0.35 | 0.71 |
| pi | HRV | 0.33 | 1.00 |

S4 Table. Breakdown of injury count by sport and injury type (chronic or acute)

| sport | acute | chronic |
|------------|------------|------------|
| athletics | 43.9% (18) | 56.1% (23) |
| basketball | 75.0% (6) | 25.0% (2) |
| cricket | 40.0% (4) | 60.0% (6) |
| football | 76.9% (20) | 23.1% (6) |
| gym | 25.0% (1) | 75.0% (3) |
| hockey | 88.9% (16) | 11.1% (2) |
| netball | 72.7% (8) | 27.3% (3) |
| other | 50.0% (3) | 50.0% (3) |
| rugby | 88.7% (47) | 11.3% (6) |

S5 Table. Breakdown of injury count by sport and injury location

| sport | foot / ankle | lower leg | knee | upper leg | hip | torso | upper arm / shoulder | elbow / lower arm | head / neck |
|------------|--------------|-----------|------------|------------|-----------|-----------|----------------------|-------------------|-------------|
| athletics | 36.6% (15) | 14.6% (6) | 9.8% (4) | 17.1% (7) | 7.3% (3) | 9.8% (4) | 4.9% (2) | 0.0% (0) | 0.0% (0) |
| basketball | 25.0% (2) | 0.0% (0) | 12.5% (1) | 0.0% (0) | 0.0% (0) | 37.5% (3) | 25.0% (2) | 0.0% (0) | 0.0% (0) |
| cricket | 0.0% (0) | 10.0% (1) | 20.0% (2) | 30.0% (3) | 0.0% (0) | 30.0% (3) | 0.0% (0) | 10.0% (1) | 0.0% (0) |
| football | 15.4% (4) | 7.7% (2) | 15.4% (4) | 26.9% (7) | 0.0% (0) | 0.0% (0) | 15.4% (4) | 3.8% (1) | 15.4% (4) |
| gym | 0.0% (0) | 0.0% (0) | 25.0% (1) | 0.0% (0) | 25.0% (1) | 25.0% (1) | 25.0% (1) | 0.0% (0) | 0.0% (0) |
| hockey | 27.8% (5) | 16.7% (3) | 11.1% (2) | 22.2% (4) | 0.0% (0) | 5.6% (1) | 0.0% (0) | 11.1% (2) | 5.6% (1) |
| netball | 36.4% (4) | 0.0% (0) | 27.3% (3) | 9.1% (1) | 9.1% (1) | 9.1% (1) | 9.1% (1) | 0.0% (0) | 0.0% (0) |
| other | 16.7% (1) | 0.0% (0) | 16.7% (1) | 0.0% (0) | 0.0% (0) | 50.0% (3) | 16.7% (1) | 0.0% (0) | 0.0% (0) |
| rugby | 18.9% (10) | 3.8% (2) | 26.4% (14) | 17.0% (9) | 5.7% (3) | 1.9% (1) | 17.0% (9) | 0.0% (0) | 9.4% (5) |
| Total | 23.2% (41) | 7.9% (14) | 18.1% (32) | 17.5% (31) | 4.5% (8) | 9.6% (17) | 11.3% (20) | 2.3% (4) | 5.6% (10) |

S6 Table. Probabilities of injury conditional on the variables in the Markov blanket for injured_1.

| prob | clevel | hours | NLE_1 | stiffness_1 | balance_1 |
|------|------------------------|-------|-------|-------------|-----------|
| 0.53 | club_university_county | High | Low | High | High |
| 0.46 | national_international | High | Low | High | Low |
| 0.44 | national_international | High | Low | High | High |
| 0.39 | club_university_county | Low | High | High | High |
| 0.37 | club_university_county | High | Low | High | Low |
| 0.32 | national_international | Low | High | High | Low |
| 0.32 | club_university_county | High | High | High | High |
| 0.31 | club_university_county | High | High | Low | High |
| 0.3 | national_international | Low | High | High | High |
| 0.29 | club_university_county | Low | High | Low | High |
| 0.25 | national_international | High | High | High | Low |
| 0.25 | national_international | High | High | Low | Low |
| 0.25 | club_university_county | Low | High | High | Low |
| 0.24 | national_international | High | High | Low | High |
| 0.24 | national_international | High | High | High | High |
| 0.24 | national_international | Low | High | Low | Low |
| 0.22 | national_international | Low | High | Low | High |
| 0.19 | club_university_county | High | High | Low | Low |
| 0.19 | club_university_county | High | High | High | Low |
| 0.18 | club_university_county | Low | High | Low | Low |
| 0.17 | club_university_county | Low | Low | High | High |
| 0.16 | club_university_county | High | Low | Low | High |
| 0.13 | national_international | Low | Low | High | Low |
| 0.12 | national_international | High | Low | Low | Low |
| 0.12 | national_international | Low | Low | High | High |
| 0.12 | national_international | High | Low | Low | High |
| 0.09 | club_university_county | Low | Low | High | Low |
| 0.09 | club_university_county | High | Low | Low | Low |
| 0.07 | club_university_county | Low | Low | Low | High |
| 0.06 | national_international | Low | Low | Low | Low |
| 0.05 | national_international | Low | Low | Low | High |
| 0.04 | club_university_county | Low | Low | Low | Low |

S7 Table. Probabilities of injury conditional on the variables in the Markov blanket for injured_2.

| prob | FFFS_1 | NLE_2 | stiffness_2 | HRV_2 | balance_2 |
|------|--------|-------|-------------|-------|-----------|
| 0.53 | Low | Low | High | Low | High |
| 0.46 | Low | High | High | Low | High |
| 0.41 | Low | Low | High | High | High |
| 0.39 | Low | Low | High | Low | Low |
| 0.35 | Low | High | High | High | High |
| 0.33 | Low | High | High | Low | Low |
| 0.32 | Low | Low | Low | Low | High |
| 0.28 | Low | Low | High | High | Low |
| 0.26 | Low | High | Low | Low | High |
| 0.25 | High | Low | High | Low | High |
| 0.23 | Low | High | High | High | Low |
| 0.23 | Low | Low | Low | High | High |
| 0.22 | High | High | High | Low | High |
| 0.21 | Low | Low | Low | Low | Low |
| 0.18 | Low | High | Low | High | High |
| 0.17 | High | Low | High | High | High |
| 0.17 | Low | High | Low | Low | Low |
| 0.16 | High | Low | High | Low | Low |
| 0.15 | High | High | High | High | High |
| 0.14 | Low | Low | Low | High | Low |
| 0.13 | High | High | High | Low | Low |
| 0.13 | High | Low | Low | Low | High |
| 0.11 | Low | High | Low | High | Low |
| 0.11 | High | High | Low | Low | High |
| 0.11 | High | Low | High | High | Low |
| 0.09 | High | High | High | High | Low |
| 0.08 | High | Low | Low | High | High |
| 0.08 | High | Low | Low | Low | Low |
| 0.07 | High | High | Low | High | High |
| 0.06 | High | High | Low | Low | Low |
| 0.05 | High | Low | Low | High | Low |
| 0.04 | High | High | Low | High | Low |

S8 Table. Highest and lowest probability of injury, conditional on the all variables in the Markov blanket for “injured”.

| Probability | hours | pi | nle | stiffness |
|--------------------|--------------|-----------|------------|------------------|
| 0.77 | High | injury | +1SD | +1SD |
| 0.74 | High | no injury | +1SD | +1SD |
| 0.72 | Low | injury | +1SD | +1SD |
| 0.70 | High | injury | +1SD | mean |
| 0.69 | High | injury | +1SD | -1SD |
| 0.68 | High | no injury | +1SD | mean |
| 0.66 | High | no injury | +1SD | -1SD |
| 0.65 | Low | injury | +1SD | mean |
| 0.64 | Low | injury | +1SD | -1SD |
| 0.61 | High | injury | mean | +1SD |
| 0.58 | High | no injury | mean | +1SD |
| 0.54 | Low | injury | mean | +1SD |
| 0.54 | High | injury | mean | mean |
| 0.51 | High | injury | -1SD | +1SD |
| 0.51 | High | injury | mean | -1SD |
| 0.50 | High | no injury | mean | mean |
| 0.48 | High | no injury | mean | -1SD |
| 0.48 | Low | injury | mean | mean |
| 0.47 | High | no injury | -1SD | +1SD |
| 0.46 | Low | injury | mean | -1SD |
| 0.44 | Low | injury | -1SD | +1SD |
| 0.44 | High | injury | -1SD | mean |
| 0.42 | High | injury | -1SD | -1SD |
| 0.41 | High | no injury | -1SD | mean |
| 0.38 | High | no injury | -1SD | -1SD |
| 0.37 | Low | no injury | +1SD | +1SD |
| 0.37 | Low | injury | -1SD | mean |
| 0.35 | Low | injury | -1SD | -1SD |
| 0.32 | Low | no injury | +1SD | mean |
| 0.29 | Low | no injury | +1SD | -1SD |
| 0.20 | Low | no injury | mean | +1SD |
| 0.18 | Low | no injury | mean | mean |
| 0.16 | Low | no injury | mean | -1SD |
| 0.15 | Low | no injury | -1SD | +1SD |
| 0.13 | Low | no injury | -1SD | mean |
| 0.11 | Low | no injury | -1SD | -1SD |