Use of Dietary Supplements in Elite U.S. Army Populations

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Populations Assessed

U.S. Army Rangers (April 1999)

- Males, $n=768$
- Elite Volunteer Unit
- Young, aged $23.6 \pm 4.3$ yrs
- New to Army, Low Pay
- Extremely High Physical Job Demands
U.S. Army Rangers boarding aircraft prior to Afghanistan jump
Populations Assessed (continued)

Special Forces (July 2000)

- Males, $n=152$
- Elite Volunteers
- Mature, *aged 31.3 ± 6.1 yrs*
- Substantial Army Experience
- High Physical and Mental Job Demands
U.S. Special Forces –
Khwaja Bahuaddin, Afghanistan

U.S. Special Forces –
Northern Afghanistan
Populations Assessed (continued)

Army War College (ongoing since 1999)

- Middle-to-upper management
- Mature*
  - males: $n=284$, aged $44.0 \pm 3.7$ yrs
  - females: $n=31$, aged $44.7 \pm 5.1$ yrs
- Moderate Physical Demands
- High Mental Demands

*Results presented separately for males and females.
Occupational Requirements

- Maintenance of fitness and weight standards are critical for professional advancement of soldiers.
- Failure to meet standards eventually leads to separation from the service.
  - in some units, advancement depends on maintaining a very high fitness level
- Individual annual performance ratings reflect physical fitness as measured by a standardized test.
Proportion Engaging in Physical Exercise 3 or more Times/week

<table>
<thead>
<tr>
<th></th>
<th>Rangers</th>
<th>Special Forces</th>
<th>Army War College (Males)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic Exercise</td>
<td>98.4 %</td>
<td>96.0 %</td>
<td>74.5 %</td>
</tr>
<tr>
<td>Strength Training</td>
<td>45.3 %</td>
<td>35.8 %</td>
<td>33.6 %</td>
</tr>
</tbody>
</table>
Regular Use of Supplements

* Males Only

- Yes - at least once/week

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Rangers</th>
<th>Special Forces</th>
<th>Army War College</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Rangers
* Special Forces
* Army War College
Rangers
Top 10 Supplements Used*
(n=768, aged 23.6 ± 4.3 yrs, Males)

1. Carbo-Electrolyte Drinks  70 %
2. Multivitamins            28 %
3. Creatine                23 %
4. Protein/Amino Acids     23 %
5. Sports Bars             22 %

* Asked for use of supplements in the past three months.
Top 10 Supplements Used
(n=768, aged 23.6 ± 4.3 yrs, Males)

6. Antioxidants 20 %
7. Herbs (Ginseng & Garlic, etc) 13 %
8. Androstenedione 8 %
9. Vitamin C 7 %*
10. Vitamin A 4 %*

* From Ranger I Survey
Special Forces
Top 10 Supplements Used
(n=152, aged 31.3 ± 6.1 yrs, Males)

1. Sports Drink 36 %
2. Multivitamin 32 %
3. Protein Powder 16 %
4. Creatine 16 %
5. Sports Bar 15 %
## Special Forces

### Top 10 Supplements Used

*(n=152, aged 31.3 ± 6.1 yrs, Males)*

<table>
<thead>
<tr>
<th></th>
<th>Supplement</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Vitamin C</td>
<td>11%</td>
</tr>
<tr>
<td>7</td>
<td>Meal replacement drinks</td>
<td>9%</td>
</tr>
<tr>
<td>8</td>
<td>Vitamin E</td>
<td>7%</td>
</tr>
<tr>
<td>9</td>
<td>Antioxidants</td>
<td>6%</td>
</tr>
<tr>
<td>10</td>
<td>Androstenedione</td>
<td>6%</td>
</tr>
</tbody>
</table>
# Special Forces

## 2nd Tier Supplements Used

(n=152, aged 31.3 ± 6.1 yrs, Males)

<table>
<thead>
<tr>
<th>No.</th>
<th>Supplement</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td>Ginseng</td>
<td>5%</td>
</tr>
<tr>
<td>12.</td>
<td>Vitamin A</td>
<td>5%</td>
</tr>
<tr>
<td>13.</td>
<td>B-Complex</td>
<td>5%</td>
</tr>
<tr>
<td>14.</td>
<td>Ephedra/Ma Huang</td>
<td>5%</td>
</tr>
<tr>
<td>15.</td>
<td>Garlic</td>
<td>3%</td>
</tr>
<tr>
<td>16.</td>
<td>Potassium</td>
<td>3%</td>
</tr>
<tr>
<td>17.</td>
<td>Caffeine</td>
<td>3%</td>
</tr>
<tr>
<td>18.</td>
<td>Sports Gel</td>
<td>2%</td>
</tr>
</tbody>
</table>
Army War College - MALE
Top 10 Supplements Used
(n=284, aged 44.0 ± 3.7 yrs)

1. Multivitamin 42 %
2. Vitamin E 25 %
3. Vitamin C 19 %
4. Sports Drinks 11 %
5. Antioxidants 9 %
### Army War College - MALE

**Top 10 Supplements Used**

(n=284, aged 44.0 ± 3.7 yrs)

<table>
<thead>
<tr>
<th></th>
<th>Supplement</th>
<th>Usage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>B-Complex</td>
<td>7 %</td>
</tr>
<tr>
<td>7</td>
<td>Garlic</td>
<td>7 %</td>
</tr>
<tr>
<td>8</td>
<td>Beta-carotene</td>
<td>6 %</td>
</tr>
<tr>
<td>9</td>
<td>Ginkgo biloba</td>
<td>6 %</td>
</tr>
<tr>
<td>10</td>
<td>Calcium</td>
<td>6 %</td>
</tr>
</tbody>
</table>
Army War College - FEMALE
Top 10 Supplements Used
(n=31, aged 44.7 ± 5.1 yrs)

1. Multivitamin 53 %
2. Calcium 39 %
3. Vitamin E 36 %
4. Vitamin C 33 %
5. Antioxidants 23 %

Female Regular use of supplements = 82%
Army War College - FEMALE
Top 10 Supplements Used
(n=31, aged 44.7 ± 5.1 yrs)

6. Beta-carotene 19 %
7. Magnesium 15 %
8. Folate 15 %
9. B-Complex 14 %
10. B6 (pyridoxine) 12 %
Supplement Use Across Groups (Males)

Bars with different symbols are statistically different.
Reasons for Supplement Use

Bars with different symbols are statistically different.
CONCLUSIONS

1. Elite Army populations consume high levels of nutritional supplements

2. Different Elite Army populations have different patterns of supplement use depending on perceived need

3. Editorial comment: Research to justify this level of supplement use is lacking


THE END