

**Deployment Injuries and Injury Risk Factors in a Light
Infantry Brigade Combat Team, May 2011–May 2012**

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**Clinical Public Health & Epidemiology Directorate
Injury Prevention Division**

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14. ABSTRACT Army Soldiers are asked to work in difficult terrain and harsh environments while deployed, with musculoskeletal and non-battle injuries as a major, if not the most prevalent, cause of injury during deployment. Purpose: To describe physical training, injuries, and injury risk factors during deployment for Soldiers in the 2^d Brigade, 4th Infantry Division. Methods: In April/May 2012, in support of the Soldier Medical Readiness Campaign, the Army Public Health Center was tasked by the Office of the Surgeon General (OTSG) to administer surveys to the 2^d Brigade, 4th Infantry Division (2-4ID) in order to assess injuries throughout a deployment cycle. Surveys collected data on unit physical training (PT), personal PT, tobacco use, and injuries during deployment. Injury data included mechanisms, activities, and limited duty days associated with injury. Two multivariable logistic regression models were used to assess factors associated with injury risk. Results: In total, there were 1,959 men and 132 women surveyed. Most Soldiers were male (94%), between 26 and 30 years old (29%), and enlisted (93%). While deployed, 926 Soldiers (45%) reported participating in unit PT and 97% of Soldiers (n=2,028) reported having a personal PT program. Despite training in the Iron Horse Optimization Program prior to deployment, over 40% reported that unit PT during deployment centered on traditional PT, or training for the APFT. Though resistance training was common, with (84%) reporting participation in resistance training on their own while deployed, cross-training was not common. Nearly one-third (30%) indicated that they had been injured during deployment (30% of men, 29% of women). For those who indicated that they had been injured during their most recent deployment, 52 percent had more than one injury (52% of men, 58% of women). Lower extremities (39%), followed by upper extremities (27%), and the spine and back (19%) were the leading body areas injured. The most common reported types of injuries were pain (31%), sprain (17%), strains (10%), and cut/lacerations (7%). The top three activities associated with injury during deployment were walking, hiking, and marching (21%), lifting or moving heavy objects (19%), and stepping/climbing (11%). The top three mechanisms of injury were overexertion, strenuous, or repetitive movement (38%), fall, jump, trip, or slip (24%), and struck against or by an object or person (9%). Men age 31 years or older had 2.7 higher odds of injury than men who were 22 years or younger (95% CI: 1.34-5.27, p=0.01). Men who participated in unit PT 4 to 5 times per week had 2.1 higher odds of injury than men who completed unit PT 1 to 3 times per week (95% CI: 1.10-4.13, p=0.02). Conclusions: This report provides insights into physical training, injuries, and injury risk factors during deployment. Injury types and activities associated with injury were similar to prior studies of military injuries in garrison. Among male Soldiers, higher injury risk was associated with older age and more frequent participation in unit PT. Varied PT while deployed is important for Soldier fitness due to demanding tasks associated with deployment. Future work should focus on ensuring tracking injury and injury risk factors across the deployment cycle of Soldiers in the assessment of deployment PT programs to determine the best methods of maintaining physical fitness and preventing injury while deployed, both during unit and personal PT.					
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**Deployment Injuries and Injury Risk Factors in a Light Infantry Brigade,
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1 Summary

1.1 Overview

Injuries are common during deployment, with incidence documented in the literature ranging from 12 to 41 percent (Hauret, Taylor et al. 2010, Roy, Ritland et al. 2012, Warr, Heumann et al. 2012, Nindl, Castellani et al. 2013, Roy, Lopez et al. 2013). These injuries can result in lost duty days, medical evacuations, and permanent disability that can hinder Soldier performance and compromise unit missions (Roy, Lopez et al. 2013). Causes of injuries reported during deployments to Iraq and Afghanistan have included sports and physical training, falls and jumps, motor vehicle-related incidents (Hauret, Taylor et al. 2010), load carriage (Roy, Lopez et al. 2013), lifting (Roy, Knapik et al. 2012, Roy, Lopez et al. 2013), and dismounted patrolling (Roy, Knapik et al. 2012). Exposures while deployed are unique, and include work in difficult terrain and harsh environments (Roy, Ritland et al. 2012). To date, comprehensive reviews and research that explore the physiological effects, including injury risk, among Soldiers during deployment are limited (Roy, Knapik et al. 2012, Nindl, Castellani et al. 2013). This project is a continuation of a pre-deployment analysis of injuries and injury risk factors throughout an Army Force Generation (deployment) cycle, conducted as part of the Soldier Medical Readiness Campaign.

1.2 Purpose

To describe injuries and injury risk factors during deployment to Afghanistan for Soldiers in an Army Infantry Brigade Combat Team.

1.3 Methods

In April/May 2012, the U.S. Army Public Health Center (APHC) (formerly the U.S. Army Public Health Command) administered surveys to the 2^d Brigade, 4th Infantry Division (2-4ID) in support of a series of program evaluations, as tasked by the Office of the Surgeon General and as part of the Soldier Medical Readiness Campaign. The survey collected information not available from administrative or existing medical data sources, including details on unit and personal physical fitness training during deployment, other injury risk factors, and injuries during their most recent deployment. For up to three injuries, the following details were captured: type of injury, body part injured, mechanism of injury, activity associated with the injury, duty status when injury occurred, sought medical treatment, and total days of limited duty. A multivariable logistic regression model was performed to assess factors associated with injury risk during deployment.

1.4 Results

In total, there were 1,959 men and 132 women who completed the post-deployment survey. Most Soldiers in this population were male (94%) and enlisted (93%). The average age for men was

27.5 years $\pm$ 5.7 years, and the average age for women was 26.9 years $\pm$ 5.7 years. The average body mass index (BMI) for men was 26.1 kilograms per square meter (kg/m^2) $\pm$ 3.2 kg/m^2 , and the average BMI for women was 23.9 kg/m^2 $\pm$ 2.8 kg/m^2 . The most common military occupational specialty (MOS) for men was Infantry (27%), while for women it was Supply and Logistics (26%). Regarding health behaviors, 40 percent of Soldiers reported being current smokers. While deployed, 926 individuals (44%) reported participating in unit physical training (PT). One-third ran 3 to 4 times per week, while half reported an average distance of 2 to 3 miles per running session. Over one-third of Soldiers reported not participating in cross-training (42%) or calisthenics (37%) as part of their unit PT programs. Nearly half reported performing sprint/interval training at least once a week (47%) and a high proportion reported participating in resistance training at least twice a week for unit PT (86%). Contrary to low unit PT participation, 97 percent of Soldiers reported having a personal PT program. Nearly one-third of Soldiers reported distance running 3 to 4 times per week (30%); most (82%) ran 3 or more miles per week on their own.

Of all Soldiers who completed a survey, 30 percent indicated that they had been injured during their most recent deployment (30% of men, 29% of women). For those who indicated that they had been injured, 52 percent had more than one injury (52% of men, 58% of women). Lower extremities (39%), followed by upper extremities (27%), and the spine and back (19%) were the leading body areas injured. The most common reported types of injuries were pain (31%), sprain (17%), strains (10%), and cut/lacerations (7%). The top three activities associated with injury during deployment were walking, hiking, and marching (21%), lifting or moving heavy objects (19%), and stepping/climbing (11%). The top three mechanisms of injury were overexertion, strenuous, or repetitive movement (38%), fall, jump, trip, or slip (24%), and struck against or by an object or person (9%).

Due to the small number of female Soldiers, subsequent univariate and multivariable analyses were performed for men only ($n=1,959$). Multivariable results were as follows:

- Men age *31 years or older* had 2.7 higher odds of injury than men who were 22 years or younger (OR (95% CI): 2.66 (1.34-5.27), $p=0.01$).
- Men who participated in *unit PT 4 to 5 times per week* had 2.1 higher odds of injury than men who completed unit PT 1 to 3 times per week (OR (95% CI): 2.13 (1.10-4.13), $p=0.02$).

1.5 Conclusions and Recommendations

Prevention of injury is crucial to preserving Soldier and unit readiness during deployment. Approximately one-third (31%) of Soldiers in the unit sustained one or more injuries during deployment. Participation in unit PT 4 or more times per week was associated with injury. Despite training in the Iron Horse Optimization Program prior to deployment, over 40 percent reported that unit PT centered on traditional PT, or training for the APFT. Resistance training was common, with 84 percent reporting participation in resistance training on their own while deployed. Soldiers, even in deployed environments, would benefit from guidance and instruction on appropriate physical fitness techniques and regimens; numerous options are available in FM 7-22. Maintaining physical fitness and balancing PT with other physical demands while deployed is important for Soldier injury prevention. Future work should ensure variation in training in the deployed environment and consider different PT programs to determine options for maintaining physical fitness, avoiding overtraining, and preventing injury while deployed, both during unit and personal PT.

2 References

See Appendix A for a complete list of references.

3 Authority

Under Army Regulation (AR) 40-5, Section 2-19, the APHC is responsible for providing worldwide support for Army preventive medicine activities, including epidemiologic consultation services and investigations in the areas of disease and injury prevention and control.

4 Background

In the spring of 2010, the 4th Infantry Division (ID) Surgeon noted that 69 percent of the 4th ID non-deployable population was medically not ready, and nearly half (45%) of the non-deployable Soldiers were medically not ready due to musculoskeletal injuries (Army Public Health Center (Provisional) 2014). In September 2010, the 4th ID Surgeon submitted a request to the Office of the Surgeon General (OTSG) for assistance with an evaluation of the Iron Horse Performance Optimization (IHPO) Program, a program established in the 2-4ID to optimize physical fitness, reduce injuries, and enhance medical readiness. The OTSG subsequently tasked the APHC with leading the design and execution of the evaluation. The purpose of the evaluation was to assess the effects of the IHPO program on injury and fitness among Soldiers in the 2-4ID. Results are described in PHR No. WS.0030637.3, Evaluation of the Iron Horse Performance Optimization Physical Training Program (IHPO) (Army Public Health Center (Provisional) 2014).

The evaluation was an initiative executed as part of the Army Soldier Medical Readiness Campaign (SMRC), established in 2010 by the Army Surgeon General to address high rates of deployment non-readiness attributed to medical issues (Army Public Health Center 2016). The SMRC mission included support of Army Force Generation (ARFORGEN) in each of its phases, and as such, the IHPO project included the collection of injuries and injury risk factors throughout the ARFORGEN, or deployment, cycle.

This report specifically describes injuries sustained during deployment and risk factors for injury during deployment among Soldiers in a light Infantry Brigade Combat Team in the 4th ID.

5 Methods

5.1 Survey and Data Collection

Surveys were administered to 2-4ID Soldiers in July of 2012, immediately following their return from deployment to Afghanistan from May 2011 to May 2012. The survey included questions on personal and health characteristics, unit and personal physical fitness activities, and injury. The unit also administered a series of fitness tests, including the Functional Movement Screen (FMS). As this report examines risk factors for injury during deployment, FMS performance post-deployment was not included in the analysis. Appendix B presents a summary of FMS scores obtained from the unit.

Data collected via survey included:

- Demographics including gender, age, rank, battalion, and MOS while deployed. Physiologic data included height and weight. BMI categories were calculated based on the U.S. Centers for Disease Control and Prevention (CDC) guidelines, and were grouped into the following modified CDC categories: underweight and normal weight (≤ 24.9 kg/m²), low overweight (25.0-27.5 kg/m²), high overweight (27.6-29.9 kg/m²), and obese (30.0 kg/m² and above) (Centers for Disease Control and Prevention 2016). The “overweight” category was split into “low overweight” and “high overweight” categories with cut points consistent with the highest allowable BMI for male Army Soldiers (27.5 kg/m²), according to AR 600-9 (Department of the Army 2013). Underweight was grouped with the normal BMI category due to small counts. Age

was categorized into groups as follows: 22 years or younger, 23 to 25 years, 26 to 30 years, and 31 years and older. Current smokers were identified as those who had smoked at least 100 cigarettes in their lifetime and smoked at least one cigarette in the previous 30 days from the survey administration date, consistent with the definition used by the CDC (Jamal, Homa et al. 2015). Current smokeless tobacco users were identified as those who used any smokeless tobacco (e.g., chewing tobacco, snuff, dip) in the previous 30 days before survey administration.

- Unit physical fitness training, including unit physical training participation, unit physical training frequency, type of physical training performed by unit, cross-training programs and frequency, average weekly distance running frequency and mileage, sprint training frequency, calisthenics frequency, resistance training frequency, and types of equipment used.
- Personal physical fitness training including whether the Soldier performed personal physical training (yes/no), average weekly distance run, aerobic endurance training (not running) frequency and duration, resistance training frequency, sprint training frequency, and the program(s) upon which the Soldier's personal physical training program was based.
- APFT variables, including timed 2-minute push-up repetitions, timed 2-minute sit-up repetitions, and 2-mile run time. Soldiers reported scores from their most recent APFT (May 2011 through May 2012). High correlations have been found between actual APFT performance and self-reported APFT performance as well as actual and self-reported height and weight in Army operational units (Martin, Grier et al. 2016).
- Injury variables, including number of injuries during a Soldier's most recent deployment, type of injury, body part injured, mechanism of injury, activity associated with the injury, duty status when injury occurred, if a medical provider was seen, and total days of limited duty. All injury data were reported for the most recent injury.
- Dietary behavior was collected on the survey, since nutrition was part of the IHPO program instruction. A summary of this data is presented in Appendix E, but is not discussed further in this report.
- Within the various topics investigated, not all of the associated questions were always answered and therefore response totals for each question may not always be applicable.

5.2 Data Analysis

Descriptive statistics (frequencies, distributions, means, standard deviations (SD)) were calculated for personal and health characteristics, physical training, and injuries. To investigate potential factors associated with injury during deployment, injury rate ratios and 95% confidence intervals (95% CI) were calculated using OpenEpi (Dean 2015). Factors associated with injury at an overall p-value ≤ 0.25 in univariate analyses were included in multivariable analyses. A multivariable backward stepping logistic regression models was used to assess factors associated with injury risk during deployment. Adjusted odds ratios (OR) and 95% CI were presented for each potential risk factor. The Statistical Package for the Social Sciences (SPSS®), Version 19, was used for statistical analysis.

6 Results

6.1 Demographics

Among the 2-4ID, 2,091 Soldiers completed post-deployment surveys. Table 1 shows demographic data for all Soldiers who completed the post-deployment survey.

- At the time of survey administration (July 2012), roughly 5,000 Soldiers were associated with the 2-4ID. Exact numbers were difficult to determine, given the high turnover of Soldiers following return from deployment. Therefore, the estimated response rate for the post-

- deployment survey was 42 percent.
- Among survey respondents, men accounted for 94 percent (n=1,959) and women accounted for 6.3 percent (n=132). Age groups were evenly distributed for both men and women, with 26 to 30 year olds having the most individuals (29%). The average age for men was 27.5 years $\pm$ 5.7 years, and the average age for women was 26.9 years $\pm$ 5.7 years. Over 90 percent of those surveyed (93%) were enlisted.
 - Among those surveyed, the greatest proportion were part of the Infantry battalion (32%). Among men, the most common battalion was Infantry, comprising about a third of the male population (34%). Among women, the most common battalion was the Brigade Support Battalion (BSB), comprising over a third of the female population (38%).
 - The most common MOS for men was Infantry (30%), while for women it was Supply and Logistics (27%). Over all of the MOSSs, 70 percent of men and 39 percent of women had reported “very heavy” physical demands.
 - Considering BMI, approximately one-third of men were classified as “normal” (36%) and one-third as “low overweight” (35%). Among women, most were classified as “normal” (67%), followed by “low overweight” (24%). The average BMI for men was 26.1 kg/m² $\pm$ 3.2 kg/m² and the average BMI for women was 23.9 kg/m² $\pm$ 2.8 kg/m².

Table 1. Demographics and Body Mass Index (Soldiers who completed survey, n=2,091)

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
Gender	Men	-	-	1,959 (93.7)
	Women	-	-	132 (6.3)
Age (years) (Average age: 26.0 years $\pm$ 3.2 years)	≤ 22	384 (19.6)	30 (22.7)	414 (19.8)
	23 – 25	501 (25.6)	41 (31.1)	542 (25.9)
	26 – 30	578 (29.6)	35 (26.5)	613 (29.3)
	≥ 31	496 (25.2)	26 (19.7)	522 (25.0)
Rank	Enlisted	1,839 (94.0)	114 (86.4)	1,953 (93.4)
	Officer	109 (5.6)	18 (13.6)	127 (6.1)
	Warrant Officer	9 (0.4)	0 (-)	9 (0.4)
	Missing	-	-	2 (0.1)
Battalion	Infantry	652 (33.5)	11 (8.3)	663 (31.7)
	Armor	311 (16.0)	13 (9.8)	324 (15.5)
	Special Troops	279 (14.3)	40 (30.3)	319 (15.3)
	Brigade Support	266 (13.6)	50 (37.9)	316 (15.1)
	Cavalry	244 (12.5)	4 (3.1)	248 (11.9)
	Field Artillery	183 (9.4)	8 (6.1)	191 (9.1)
	Headquarters	14 (0.7)	6 (4.5)	20 (1.4)
Deployed Military Occupational Specialty Group	Infantry	524 (29.7)	0 (-)	524 (27.7)
	Repairer and Maintenance	205 (11.6)	8 (6.3)	213 (11.3)
	Armor	188 (10.7)	1 (0.8)	189 (10)
	Supply and Logistics	156 (8.8)	34 (26.6)	190 (10)
	Field and Air Defense Artillery	127 (7.2)	0 (-)	127 (6.7)
	Medical Corp	122 (6.9)	18 (14.1)	140 (7.4)
	Transportation	116 (6.6)	20 (15.6)	136 (7.2)
	Signals/Communication	90 (5.1)	9 (7)	99 (5.2)
	Engineers	84 (4.8)	0 (-)	84 (4.4)
	Military Intelligence,	73 (4.1)	21 (16.4)	94 (5)

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
	Psychological operations, and Electronic Warfare			
	Military Police	28 (1.6)	0 (-)	28 (1.5)
	Chemical Warfare, Explosives, and Ammunition	26 (1.5)	6 (4.7)	32 (1.7)
	Support/Administration	25 (1.4)	11 (8.5)	36 (1.9)
Physical Demand	Very Heavy	1,229 (69.7)	50 (39.1)	1,279 (67.6)
	Heavy	126 (7.1)	24 (18.8)	150 (7.9)
	Moderately Heavy	234 (13.3)	30 (23.4)	264 (14.0)
	Medium-Light	40 (2.3)	10 (7.8)	50 (2.6)
	Not Available	135 (7.6)	14 (10.9)	149 (7.9)
BMI (kg/m ²) (Average BMI: 27.5 kg/m ² ± 5.7 kg/m ²)	Normal (≤24.9 kg/m ²)	694 (35.7)	85 (66.9)	779 (37.3)
	Low Overweight (25.0-27.5 kg/m ²)	672 (34.6)	30 (23.6)	702 (33.6)
	High Overweight (27.6-29.9 kg/m ²)	357 (18.4)	11 (8.7)	369 (17.6)
	Obese (≥ 30.0 kg/m ²)	222 (11.3)	1 (0.8)	223 (10.7)
	Missing	-	-	18 (0.9)

6.2 Physical Fitness

6.2.1 Army Physical Fitness Test Performance

Tables 2–4 represent a summary of APFT performance. Approximately 87 percent of Soldiers that completed the survey had push-up and sit-up scores, and 72 percent had 2-mile run scores.

Table 2. Summary of APFT Data for Men and Women (n=1,825)

APFT Measure	Men		Women	
	N	(Mean ± SD)	N	(Mean ± SD)
Push-ups (repetitions)	1,711	66.7 ± 14.4	114	40.3 ± 13.2
Sit-ups (repetitions)	1,710	67.4 ± 12.8	114	66.5 ± 14.8
2-Mile Run Time (minutes and fraction of a minute)	1,428	14.9 ± 1.5	86	17.0 ± 1.8

Table 3. Summary of APFT Data for Men (n=1,711)

Variable	Quartiles of performance	Total N (%)
APFT Push-ups (repetitions) (Mean: 66.7, SD: 14.4)	≤ 56	442 (25.8)
	57-67	415 (24.2)
	68-76	427 (25.0)
	≥ 77	427 (25.0)
APFT Sit-ups (repetitions) (Mean: 67.4, SD: 12.8)	≤ 60	558 (32.6)
	61-67	305 (17.8)

	68-76	432 (25.3)
	≥ 77	415 (24.3)
APFT Run Time	≤ 13.97	361 (25.3)
(minutes and fraction of a minute)	13.98-14.80	354 (24.8)
(Mean: 14.9, SD: 1.5)	14.81-15.75	378 (26.5)
	≥ 15.76	335 (23.4)

Table 4. Summary of APFT Data for Women (n=114)

Variable	Quartiles of performance	Total N (%)
APFT Pushups (repetitions) (Mean: 40.3, SD: 13.2)	≤ 30	31 (27.2)
	31-40	32 (28.1)
	41-50	29 (25.4)
	≥ 51	22 (19.3)
APFT Sit-ups (repetitions) (Mean: 66.5, SD: 14.8)	≤ 57	30 (26.3)
	58-65	29 (25.4)
	66-78	30 (26.3)
	≥ 79	25 (22.0)
APFT Run Time (minutes and fraction of a minute) (Mean: 17.0, SD: 1.8)	≤ 15.85	22 (25.6)
	15.86-16.98	21 (24.4)
	16.99-18.43	22 (25.6)
	≥ 18.44	21 (24.4)

6.2.2 Unit Physical Training Data

Table 5 presents a summary of unit physical training (PT) during deployment.

- Among the 2nd Brigade, 926 (44%) individuals reported participating in unit PT while deployed.
- For both men and women who participated in unit PT, the most common frequency was greater than 4 times per week (68% among men, 69% among women). For both men and women, the most common type of unit PT performed was traditional Army PT, defined as calisthenics, running, push-ups, and sit-ups (41% among men, 65% among women).
- Most individuals participating in unit PT performed distance running with their unit while deployed (99%), with the most common frequency between 3 to 4 times per week (31% of men, 49% of women).
- For those who performed distance running for unit PT, the most commonly reported distance run for both men and women was 2 to 3 miles (51% among men, 71% among women).
- The most common total weekly distance run for men was ≤ 4.00 miles per week, with 223 men (36%) in this category. For women, 6.01 to 10.00 miles per week was the most common, with 13 women (30%) in this category.
- For men and women, over 40 percent reported that cross-training was not part of their unit's PT program (42% among men, 44% among women). For those who performed cross-training exercises for unit PT, the most common frequency was less than 1 time per week for both men and women (27% among men, 31% among women).
- For sprint and interval-style running, 36 percent of men and 21 percent of women reported that

they did not perform sprint or interval training with their unit. Among those who did perform sprint and interval-style running, men and women both reported 1 to 2 times per week as their most common category, with 322 men (37%) and 26 women (54%) reporting this frequency.

- For calisthenics, the majority of men reported not performing calisthenics (37%). For women, the most commonly selected category for calisthenics frequency was “3 times per week or more” (37%).
- Men most commonly reported performing resistance training 5 times per week or more, with 317 men (37%) selecting this category. Women selected “2 times per week or less” as their most common resistance training frequency (34%).
- The majority of men and women did not perform agility drills (68%).

Table 5. Unit Physical Training During Deployment (n=926)

Variable	Categories	Men	Women	Total
		N (%)	N (%)	N (%)
Unit PT Frequency (Per Week)	1-2 times	89 (10.3)	5 (9.8)	94 (10.3)
	3-4 times	190 (21.9)	11 (21.6)	201 (21.9)
	> 4 times	587 (67.8)	35 (68.6)	622 (67.8)
Unit PT Performed	Continued IHPO program while deployed	57 (6.6)	3 (5.9)	60 (6.6)
	Continued modified IHPO program while deployed	77 (9.0)	2 (3.9)	79 (8.7)
	Performed traditional Army PT	355 (41.3)	33 (64.7)	388 (42.6)
	Another exercise program	174 (20.2)	4 (7.8)	178 (19.5)
	Not sure	197 (22.9)	9 (17.7)	206 (22.6)
Distance Running Frequency (Per Week)	Did not perform	244 (28.0)	6 (12.2)	250 (27.2)
	<1 time	69 (7.9)	0 (-)	69 (7.5)
	1-2 times	234 (26.9)	12 (24.5)	246 (26.7)
	3-4 times	271 (31.1)	24 (49.0)	295 (32.1)
	> 4 times	53 (6.1)	7 (14.3)	60 (6.5)
Average Distance Run (Miles)	Did not perform	244 (28.0)	6 (12.2)	250 (27.2)
	<1	14 (1.6)	0 (-)	14 (1.5)
	1	17 (2.0)	2 (4.2)	19 (2.1)
	2-3	444 (51.0)	35 (71.4)	479 (52.1)
	≥ 4	151 (17.4)	6 (12.2)	157 (17.1)
Total Weekly Mileage Run (Miles Per Week)	≤ 4.00	223 (35.7)	8 (18.6)	231 (34.6)
	4.01-6.00	139 (22.2)	12 (27.9)	151 (22.5)
	6.01-10.00	123 (19.7)	13 (30.2)	136 (20.4)
	≥ 10.01	140 (22.4)	10 (23.3)	150 (22.5)
Cross-training Frequency (Per Week)	Did not perform	360 (42.0)	21 (43.8)	381 (42.1)
	<1 time	232 (27.1)	15 (31.1)	247 (27.3)
	1-2 times	160 (18.7)	9 (18.8)	169 (18.7)
	3-4 times	87 (10.2)	3 (6.3)	90 (9.9)
	≥ 5 times	18 (2.0)	0 (-)	18 (2.0)
	Did not perform	313 (36.0)	10 (20.8)	323 (35.2)

Variable	Categories	Men	Women	Total
		N (%)	N (%)	N (%)
Sprint / Interval Style Running Frequency (Per Week)	<1 time	157 (18.0)	9 (18.8)	166 (18.1)
	1-2 times	322 (37.0)	26 (54.2)	348 (37.9)
	≥ 3 times	78 (9.0)	3 (6.2)	81 (8.8)
Calisthenics Frequency (Per Week)	Did not perform	321 (37.1)	14 (28.6)	335 (36.7)
	<1 time	130 (15.1)	8 (16.3)	138 (15.1)
	1-2 times	227 (26.2)	9 (18.4)	236 (25.8)
	≥ 3 times	187 (21.6)	18 (36.7)	205 (22.4)
Resistance Training Frequency (Per Week)	Did not perform	118 (13.6)	13 (26.0)	131 (14.3)
	≤ 2 times	202 (23.4)	17 (34.0)	219 (23.9)
	3-4 times	228 (26.4)	11 (22.0)	239 (26.1)
	≥ 5 times	317 (36.6)	9 (18.0)	326 (35.6)
Agility Drills Frequency (Per Week)	Did not perform	583 (67.2)	35 (71.4)	618 (67.5)
	<1 time	124 (14.3)	9 (18.4)	133 (14.5)
	1-2 times	109 (12.6)	3 (6.1)	112 (12.2)
	≥ 3 times	51 (5.9)	2 (4.1)	53 (5.8)

6.2.3 Personal Physical Training Data

Table 6 summarizes personal physical training (PT) during deployment.

- For men and women combined, 2,028 Soldiers (97%) reported having a personal PT program while deployed.
- Both men and women reported performing distance running 3 to 4 times per week, with 569 men (29%) and 63 women (48%) selecting this category. Both men and women also selected 2 to 3 miles as their average distance run when performing distance running, with 1,013 men (54%) and 80 women (62%) selecting this category. Approximately one-third (36%) of men ran a total of 3 to 6 miles per week during personal PT. Slightly over one-third (37%) of women ran a total of 10 miles or more per week during personal PT. Approximately 30 percent of men and women reported running 10 miles or more per week during personal PT.
- For men, nearly one-third (n=628, 32%) reported a frequency of aerobic endurance training not involving running of 1 to 2 times per week. For women, “1 to 2 times per week” and “3 to 4 times per week” were equally selected as the most common frequency of aerobic endurance training not involving running, with 40 women (30%) selecting each of these categories. For men and women combined, the most commonly selected category was “1 to 2 times per week”, with 668 individuals (32%) selecting this category.
- For duration of aerobic activity not involving running, men most commonly reported 30 to 60 minutes (n=759, 39%). Women also most commonly selected 30 to 60 minutes (n=89, 67%). Approximately one-quarter (26%) of men and women did not perform aerobic activity not involving running.
- For resistance training frequency, men most commonly reported engaging in resistance training during personal PT 5 times per week or more (n=749, 39%). Women most commonly reported resistance training 3 to 4 times per week (n=39, 30%). The most commonly selected resistance training frequency category for men and women combined was “5 times per week or more,” with 766 individuals (37%) choosing this category. Ten percent (n=212) of men and women did

- not perform resistance training for personal PT.
- For sprint and interval-style running frequency, most men selected the “did not perform” category, with 874 male Soldiers (45%) selecting this category. For women, the most commonly selected category was “1 to 2 times per week,” with 55 female Soldiers (42%) selecting this category. Forty-four percent (n=922) of male and female Soldiers reported not performing sprint and interval-style running.
- Slightly over one-third (37%) of men and women collectively reported a non-specific basis for their personal PT program.

Table 6. Personal Physical Training During Deployment (n=2,028)

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
Personal PT Participation	Yes	1,900 (97.0)	128 (97.0)	2,028 (97.0)
	No	59 (3.0)	4 (3.0)	63 (3.0)
Distance Running Frequency (Per Week)	Did not perform	378 (19.4)	17 (12.9)	395 (19.0)
	<1 time	202 (10.7)	3 (2.3)	205 (10.2)
	1-2 times	535 (27.5)	29 (22.0)	564 (27.1)
	3-4 times	569 (29.2)	63 (47.7)	632 (30.4)
	≥ 5 times	264 (13.6)	20 (15.2)	284 (13.7)
Average Distance Run (Miles)	Did not perform	354 (18.9)	17 (13.0)	371 (18.5)
	≤ 1	142 (7.6)	1 (0.8)	143 (7.1)
	2-3	1,013 (54.2)	80 (61.6)	1,093 (54.6)
	4-5	312 (16.7)	29 (22.1)	341 (17.0)
	≥ 6	49 (2.6)	4 (3.1)	53 (2.6)
Total Weekly Mileage Run (Miles Per Week)	≤ 2	303 (19.3)	7 (6.1)	310 (18.4)
	3-6	558 (35.5)	40 (34.8)	598 (35.4)
	7-9	256 (16.3)	25 (21.7)	281 (16.6)
	≥ 10	457 (29.0)	43 (37.4)	500 (29.6)
Aerobic Endurance Frequency (Not Involving Running) (Per Week)	Did not perform	583 (30.0)	15 (11.4)	598 (28.8)
	<1 time	254 (13.1)	15 (11.4)	269 (13.0)
	1-2 times	628 (32.4)	40 (30.3)	668 (32.2)
	3-4 times	364 (18.8)	40 (30.3)	404 (19.5)
	≥ 5 times	112 (5.8)	22 (16.7)	134 (6.5)
How Long Aerobic Endurance (Not Involving Running) (Minutes)	Did not perform	513 (26.5)	14 (10.6)	527 (25.5)
	≤ 30	425 (22.0)	16 (12.1)	441 (21.3)
	30-60	759 (39.2)	89 (67.4)	848 (41.0)
	≥ 60	239 (12.3)	13 (9.8)	252 (12.2)
Resistance Training Frequency (Per Week)	Did not perform	184 (9.5)	28 (21.2)	212 (10.2)
	<1 time	113 (5.8)	11 (8.3)	124 (6.0)
	1-2 times	320 (16.5)	37 (28.0)	357 (17.2)
	3-4 times	573 (29.6)	39 (29.5)	612 (29.6)
	≥ 5 times	749 (38.6)	17 (12.9)	766 (37.0)
Sprint/Interval Style	Did not perform	874 (44.7)	48 (36.4)	922 (44.2)

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
Running Frequency (Per Week)	<1 time	331 (16.9)	23 (17.4)	354 (17.0)
	1-2 times	548 (28.0)	55 (41.7)	603 (28.9)
	≥ 3 times	203 (10.4)	6 (4.5)	209 (10.0)
What program is your personal physical training program based upon?	Non-specific	575 (37.0)	33 (30.0)	608 (36.5)
	Traditional PT only	219 (14.1)	21 (19.1)	240 (14.4)
	Traditional PT + other	34 (2.2)	4 (3.6)	38 (2.3)
	Cross-training	131 (8.4)	7 (6.4)	138 (8.3)
	Extreme Conditioning Programs (e.g. P90X)	284 (18.3)	17 (15.5)	301 (18.1)
	Extreme Conditioning Programs + Other	186 (12.0)	21 (19.1)	207 (12.4)
	Other (e.g. weightlifting)	126 (8.1)	7 (6.4)	133 (8.0)

6.2.4 Physical Fitness Equipment Usage

Table 7 presents exercise equipment use during deployment collectively for men and women.

- Fifty-eight percent of Soldiers (n=1,218) did not report on the availability and use of exercise equipment during deployment. Data below reflect responses reported by 873 Soldiers. Percentages available reflect the percent of total Soldiers (2,091) who reported availability of equipment. Percentages used reflect the percent of total Soldiers (2,091) who used the equipment.
- Among Soldiers who reported equipment availability, 41 percent (n=862) had available free weights, 40 percent (n=845) had available treadmills, and 39 percent (n=814) had available pull-up bars.
- Among Soldiers who reported equipment use, 37 percent (n=768) used free weights, 35 percent (n=738) used treadmills, and 33 percent (n=696) used pull-up bars during deployment.

Table 7. Physical Fitness Equipment Use During Deployment (n=873 responses)

Equipment	Available	Used
	N (%)*	N (%)*
Free Weights	862 (41.2)	768 (36.7)
Treadmill	845 (40.4)	738 (35.3)
Pull-Up Bars	814 (38.9)	696 (33.2)
Stationary Bike	665 (31.8)	517 (24.7)
Running Area	598 (28.6)	522 (25.0)
Universal Weight	558 (26.7)	461 (22.0)
Stair-stepping machine	536 (25.6)	308 (14.7)
Basketball Court	457 (21.9)	295 (14.1)
Track	245 (11.7)	207 (9.9)
Nautlius	190 (9.1)	122 (5.8)
Soccer Field	95 (4.5)	42 (2.0)
Swimming Facility	81 (3.9)	26 (1.2)
Outdoor Bikes	24 (1.1)	10 (0.5)

Baseball Field	20 (1.0)	11 (0.5)
Tennis Court	16 (0.8)	6 (0.3)
Racquetball Court	15 (0.7)	8 (0.4)
Other	19 (0.9)	14 (0.7)

* Percentage among Soldiers reporting on equipment availability and use.

6.3 Tobacco Use

Tables 8 and 9 display tobacco use data for male and female Soldiers for cigarette and smokeless tobacco use.

6.3.1 Cigarette Smoking

- Among those surveyed, 1,390 men (72%) stated that they had smoked a whole cigarette in their lifetime and 1,150 men (59%) reported ever smoking more than 100 cigarettes in their lifetime. Eighty women (62%) stated that they had smoked a whole cigarette in their lifetime and 56 women (42%) reported ever smoking more than 100 cigarettes in their lifetime.
- In total there were 803 men (41%) and 39 women (30%) considered current smokers. Current smokers were defined as having smoked a whole cigarette in their lifetime and smoked at least one cigarettes in the previous 30 days.
- Most male and female smokers reported smoking a total of 21 to 30 days in the last 30 days before completing the survey (73% and 61%, respectively).
- Among both male and female smokers, the most frequently reported age at first cigarette use was 18 or older (43% and 62%, respectively). Male smokers were evenly distributed with their responses to the number of years they have smoked, with 0 to 5 years being the most common response (37%). Female smokers also most frequently reported smoking for 0 to 5 years (61%).
- Twenty-two percent (n=417) of men and 19% (25) of women reported they had quit smoking cigarettes. Among men who quit, 54% quit 5 or more years prior to survey completion. Among women who quit, 60% quit within less than 5 years of survey completion.
- Over half of the women (56%) and under half of the men (47%) responding to deployed smoking tobacco use reported they did not smoke while deployed. Among those that smoked while deployed, 15% of men and 26% of women began smoking cigarettes while deployed.
- Approximately one-third of men and one quarter of women who reported smoking while deployed smoked the same amount of cigarettes as prior to deployment.
- Twenty-three percent of Soldiers smoked more cigarettes while deployed compared to pre-deployment.
- Approximately 9% of Soldiers reported smoking fewer cigarettes while deployed compared to pre-deployment.

Table 8. Summary of Cigarette Use (n=2,071)

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
Ever Smoked Whole Cigarette	Yes	1,390 (71.6)	80 (62.0)	1,470 (71.0)
	No	552 (28.4)	49 (38.0)	601 (29.0)
Age of First Cigarette (Years)	≤ 13	237 (17.5)	5 (6.3)	242 (16.9)
	14-17	539 (39.9)	25 (31.6)	564 (39.4)
	≥ 18	575 (42.6)	49 (62.0)	624 (43.6)

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
Ever Smoke >100 Cigarettes in Lifetime?	Yes	1,150 (58.9)	56 (42.4)	1,206 (57.8)
	No	803 (41.1)	76 (57.6)	879 (42.2)
Smoked Last 30 Days	Yes	805 (41.1)	39 (29.5)	844 (40.4)
	No	1,154 (58.9)	93 (70.5)	1,247 (59.6)
Current Smoker or Nonsmoker	Smoker	803 (41.2)	39 (29.5)	842 (40.5)
	Nonsmoker	1,144 (58.8)	93 (70.5)	1,237 (59.5)
If Smoked in Last 30 Days: How Many Days Did You Smoke Cigarettes? (Of Last 30 Days)	1-10	140 (17.4)	7 (18.4)	147 (17.4)
	11-20	78 (9.7)	8 (21.1)	86 (10.2)
	21-30	587 (72.9)	23 (60.5)	610 (72.4)
If Smoked in Last 30 Days: How Many Cigarettes per day? (Last 30 Days)	1-10	497 (62.8)	36 (94.7)	533 (64.2)
	11-20	259 (32.7)	2 (5.3)	261 (31.4)
	≥ 21	36 (4.5)	0 (-)	36 (4.3)
If Currently Smoking, Years Smoked	0-5	234 (35.2)	18 (58.1)	252 (36.3)
	6-10	220 (33.1)	6 (19.4)	226 (32.5)
	≥ 11	210 (31.6)	7 (22.6)	217 (31.2)
Tobacco Use during Deployment				
Cigarette Smoking while Deployed	Yes	1,029 (53.5)	58 (43.9)	1,087 (52.9)
	No	893 (46.5)	74 (56.1)	976 (47.1)
Started Smoking while Deployed	Yes	150 (14.6)	15 (25.9)	165 (15.2)
	No	879 (85.4)	43 (74.1)	922 (84.8)
Deployed Smoking Amount Compared to Pre-Deployment	More cigarettes	455 (44.2)	23 (39.7)	478 (44.0)
	Same amount of cigarettes	333 (32.4)	15 (25.9)	348 (32.0)
	Fewer cigarettes	91 (8.8)	5 (8.6)	96 (8.8)

6.3.2 Smokeless Tobacco

- Among those surveyed, 383 men stated that they used smokeless tobacco (20%). Six women reported using smokeless tobacco (5%).
- Men who used smokeless tobacco most frequently reported using smokeless tobacco for 16 days or more during the 30 days prior to taking this survey (66%).
- For male smokeless tobacco users, most reported that they have used smokeless tobacco for 5 years or more (57%).
- For men who quit smokeless tobacco, most reportedly had quit for 12 months or less (98%) prior to the survey.
- Considering smokeless tobacco use while deployed, most men (74%) and women (96%) reported that they had never used smokeless tobacco or were currently not using smokeless tobacco.
- Among those who reported using smokeless tobacco while deployed, 11% of men and 50% of women began using smokeless tobacco while deployed.
- Among those who reported using smokeless tobacco while deployed, 31% of men and 17% of women reported using the same amount of smokeless tobacco during deployment as prior to deployment. Meanwhile, 48% of men and 17% of women reported using more smokeless tobacco while deployed compared to pre-deployment use.

- Among all Soldiers, 16% of men and 3% of women reported using both cigarettes and smokeless tobacco while deployed.

Table 9. Summary of Smokeless Tobacco Use (n=2,066)

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
Current Smokeless Tobacco User	Yes	383 (19.8)	6 (4.6)	389 (18.8)
	No	1,552 (80.2)	125 (95.4)	1,677 (81.2)
If Used Smokeless Tobacco in Last 30 Days: Days of Smokeless Tobacco Use	≤ 15	117 (34.3)	0 (-)	117 (34.2)
	≥ 16	224 (65.7)	1 (100.0)	225 (65.8)
If Currently Use Smokeless Tobacco: Years of Smokeless Tobacco Use	< 5	128 (42.8)	0 (-)	128 (42.7)
	≥ 5	171 (57.2)	1 (100.0)	172 (57.3)
If Currently Use Smokeless Tobacco: Number of Cans of Smokeless	≤ 1	174 (63.7)	1 (100.0)	175 (63.9)
	2-3	30 (11.0)	0 (-)	30 (10.9)
	≥ 4	69 (25.3)	0 (-)	69 (25.2)
If Currently Use Smokeless Tobacco: Number of Pouches of Smokeless	≤ 1	7 (23.3)	0 (-)	7 (23.3)
	2-3	10 (33.3)	0 (-)	10 (33.3)
	≥ 4	13 (43.3)	0 (-)	13 (43.3)
If Currently Use Smokeless Tobacco: Number of Plugs of Smokeless	≤ 1	7 (21.9)	0 (-)	7 (21.9)
	2-3	14 (43.8)	0 (-)	14 (43.8)
	≥ 4	11 (34.4)	0 (-)	11 (34.4)
Tobacco Use during Deployment				
Smokeless Tobacco while Deployed	Yes	500 (25.9)	6 (4.5)	506 (24.5)
	No	1,432 (74.1)	126 (95.5)	1,558 (75.5)
Started Using Smokeless Tobacco while Deployed	Yes	56 (11.2)	3 (50.0)	59 (11.7)
	No	444 (88.8)	3 (50.0)	447 (88.3)
Deployed Smokeless Amount Compared to Pre-Deployment	More	238 (47.6)	1 (16.7)	239 (47.2)
	Same	153 (30.6)	1 (16.7)	154 (30.4)
	Fewer	53 (10.6)	1 (16.7)	54 (10.7)
Smokeless Tobacco and Cigarettes Use while Deployed	Yes	321 (16.4)	4 (3.0)	325 (15.5)
	No	1,638 (83.6)	128 (97.0)	1,766 (84.5)

6.4 Injuries During Deployment

6.4.1 Self-Reported Injuries

Table 10 represents self-reported injury during deployment data by gender. Of all Soldiers who completed a survey, 30 percent (n=616) indicated that they had been injured during their most recent deployment (30% of men, 29% of women). For those who indicated that they had been injured, 52 percent had only one injury (52% of men, 58% of women).

- Among men, the most commonly reported injured body area was the lower extremity (39%). Among women, the most commonly reported injured body area was also the lower extremity (43%).
- The most commonly reported type of injury among all Soldiers was (31%), followed by sprains (17%), and strains (10%).
- Overexertion, strenuous, or repetitive movements was the most commonly reported mechanism of injury among men (38%), followed by falls, jumps, trips, or slips (25%). For women, overexertion, strenuous, or repetitive movement (33%) was the most commonly reported specific category of injury
- Considering the activity associated with injury among men, walking, hiking, and marching was the most commonly reported activity associated with injury (21%), followed by lifting or moving heavy objects (19%), and stepping/climbing (11%). Among women, walking, hiking, and marching (22%), lifting or moving heavy objects (19%), and physical training involving running (19%) were equally the most commonly reported activity associated with injury.

Table 10. Characteristics of Self-Reported Most Recent Injuries by Gender (n=616)

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
Number of Injuries	1	302 (52.0)	22 (57.9)	324 (52.3)
	>1	280 (48.0)	16 (42.1)	296 (47.7)
Body Area	Head and Neck	68 (12.2)	3 (8.1)	71 (11.9)
	Spine and Back	106 (19.0)	4 (10.8)	110 (18.5)
	Torso	8 (1.4)	2 (5.4)	10 (1.7)
	Lower Extremity	215 (38.5)	16 (43.2)	231 (38.8)
	Upper Extremity	149 (26.7)	11 (29.7)	160 (26.9)
	Other ^a	12 (2.2)	1 (2.7)	13 (2.2)
Type of Injury	Pain	167 (30.3)	13 (38.2)	180 (30.8)
	Sprain	95 (17.2)	7 (20.6)	102 (17.4)
	Strain	56 (10.2)	3 (8.8)	59 (10.1)
	Cut / Laceration	42 (7.6)	1 (2.9)	43 (7.4)
	Fracture	28 (5.1)	-	28 (4.8)
	Traumatic Brain Injury	24 (4.4)	1 (2.9)	25 (4.3)
	Bruise	18 (3.3)	1 (2.9)	19 (3.2)
	Nerve Injury	21 (3.8)	1 (2.9)	22 (3.8)
	Tendonitis	17 (3.1)	1 (2.9)	18 (3.1)
	Tear	14 (2.5)	1 (2.9)	15 (2.6)
	Dislocation	10 (1.8)	1 (2.9)	11 (1.9)
	Bursitis	2 (0.4)	2 (5.9)	4 (0.7)
	Heat Injury	3 (0.5)	1 (2.9)	4 (0.7)
	Stress Fracture	6 (1.1)	0 (-)	6 (1.0)
	Abrasion	3 (0.5)	0 (-)	3 (0.5)
	Fasciitis	3 (0.5)	0 (-)	3 (0.5)
	Blister	1 (0.2)	0 (-)	1 (0.2)
	Cold Injury	0 (-)	0 (-)	0 (-)

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
Mechanism of Injury	Other ^b	39 (7.1)	1 (2.9)	40 (6.8)
	Overexertion, Strenuous, or Repetitive Movement	41 (38.3)	2 (33.3)	43 (38.1)
	Fall, Jump, Trip, or Slip	27 (25.2)	0 (-)	27 (23.9)
	Struck Against or by an Object or Person	9 (8.4)	1 (16.7)	10 (8.8)
	Direct Contact with Enemy	5 (4.7)	0 (-)	5 (4.4)
	Cut by a Sharp Object or Instrument	3 (2.8)	0 (-)	3 (2.7)
	Environment Factors such as Heat or Cold	4 (3.7)	0 (-)	4 (3.5)
	Fire, Hot Substance or Object, or Steam	1 (0.9)	0 (-)	1 (0.9)
	Other ^d	17 (15.9)	3 (50.0)	20 (17.7)
Activity Associated with Injury	Walking, Hiking, Marching	119 (21.0)	8 (21.6)	127 (21.1)
	Lifting or Moving Heavy Objects	105 (18.6)	7 (18.9)	112 (18.6)
	Stepping / Climbing	63 (11.1)	1 (2.7)	64 (10.6)
	Physical Training (Not Running)	50 (8.8)	4 (10.8)	54 (9.0)
	Physical Training (Running)	48 (8.5)	7 (18.9)	55 (9.1)
	Repairing or Maintaining Equipment	38 (6.7)	1 (2.7)	39 (6.5)
	Gunshot, Missile, or Blast	35 (6.2)	2 (5.4)	37 (6.1)
	Riding or Driving in a Motorized Vehicle	32 (5.7)	1 (2.7)	33 (5.5)
	Sports / Recreation	22 (3.9)	1 (2.7)	23 (3.8)
	Other Exercise	12 (2.1)	0 (-)	12 (2.0)
	Rough-Housing or Fighting	2 (0.4)	0 (-)	2 (0.3)
	Other ^c	40 (7.1)	5 (13.5)	45 (7.5)

Notes:

^a Other body area includes: teeth, rib^b Other type of injury includes: chronic pain, insect bite^c Other activity associated with injury includes: on patrol, working^d Other mechanism of injury includes: ruck march, lifting

Table 11a shows injury types with frequencies (for the most recent injury), as well as the total number of limited duty days resulting from each injury type.

- Overall, there were 583 total injury types reported (n=37 were missing injury types), which accounted for 7,513 total limited duty days.
- The most frequently reported injury type was pain, accounting for 180 (31%) total injuries and 2,161 (29%) combined limited duty days. Strains accounted for the second largest number of limited duty days with 891 (12%) total days, followed by fractures with 721 (10%) limited duty days, and nerve injuries with 690 (9%) limited duty days.
- Among the 42 Soldiers who reported pain that resulted in limited duty days, the average length

of limited duty was 51 days $\pm$ 85 days. Among the 24 Soldiers who reported strains that resulted in limited duty days, the average length of limited duty was 37 days $\pm$ 75 days. Among the 34 Soldiers who reported sprains that resulted in limited duty days, the average length of limited duty was 18 days $\pm$ 20 days. Nerve injuries resulted in the highest average length of limited duty days (69 days $\pm$ 116 days).

Table 11b represents the injured body area with frequencies for those who reported an injury (for the most recent injury), as well as the total number of limited duty days by body area.

- Overall, there were 595 injuries in which body area was reported, which accounted for 7,274 limited duty days.
- Lower extremity was the most commonly reported injured body area with 231 (39%) individuals reporting this body area, and accounted for 2,802 (39%) total limited duty days. Upper extremity was the second most commonly reported injured body area, with 160 (27%) individuals and 1,964 (27%) total limited duty days, followed by spine and back with 110 (19%) individuals and 1,299 (18%) total limited duty days.
- Among the 81 Soldiers who experienced lower extremity injury that resulted in limited duty days, the average length of limited duty was 35 days $\pm$ 63 days. Among the 51 Soldiers who experienced upper extremity injury that resulted in limited duty days, the average length of limited duty was 39 days $\pm$ 58 days. Head and neck injuries resulted in the highest average length of limited duty days (41 days $\pm$ 85 days).

Table 11a. Injury Type and Limited Duty Days for Most Recent Injury (n=585)

Injury Type	Most Recent Injury (%)	Total Injuries resulting in Temporary Profile	Total Limited Duty Days (%)	Average Limited Duty Days per Injury Type $\pm$ SD
Pain	180 (30.8)	42	2,161 (28.8)	51 $\pm$ 85
Sprain	102 (17.4)	34	596 (7.9)	18 $\pm$ 20
Strain	59 (10.1)	24	891 (11.9)	37 $\pm$ 75
Cut / Laceration	43 (7.3)	17	159 (2.1)	9 $\pm$ 7
Fracture	28 (4.8)	15	721 (9.6)	48 $\pm$ 54
Traumatic Brain Injury	25 (4.3)	11	170 (2.3)	15 $\pm$ 26
Nerve Injury	22 (3.8)	10	690 (9.2)	69 $\pm$ 116
Bruise	19 (3.2)	2	34 (0.5)	17 $\pm$ 18
Tendonitis	18 (3.1)	11	430 (5.7)	39 $\pm$ 30
Tear	15 (2.6)	5	204 (2.7)	41 $\pm$ 34
Dislocation	11 (1.9)	7	226 (3.0)	32 $\pm$ 42
Stress Fracture	6 (1.0)	1	14 (0.2)	14 $\pm$ 0
Heat Injury	4 (0.7)	0	0 (-)	0 (-)
Bursitis	4 (0.7)	1	6 (0.1)	6 $\pm$ 0
Fasciitis	3 (0.5)	1	90 (1.2)	90 $\pm$ 0
Abrasion	3 (0.5)	1	0 (-)	0 (-)
Blister	1 (0.2)	1	0 (-)	0 (-)
Other	40 (6.8)	10	1,121 (14.9)	112 $\pm$ 116
Total	585	194	7,513	

Table 11b. Injured Body Area and Limited Duty Days for Most Recent Injury (n=595)

Body Area	Most Recent Injury (%)	Total Injuries resulting in Temporary Profile	Total Limited Duty Days (%)	Average Limited Duty Days per Body Area $\pm$ SD
Lower Extremity	231 (38.8)	81	2,802 (38.5)	35 $\pm$ 63
Upper Extremity	160 (26.9)	51	1,964 (27.0)	39 $\pm$ 58
Spine and Back	110 (18.5)	33	1,299 (17.9)	39 $\pm$ 74
Head and Neck	71 (11.9)	19	785 (10.8)	41 $\pm$ 85
Torso	10 (1.7)	2	31 (0.4)	16 $\pm$ 21
Other	13 (2.2)	4	393 (5.4)	98 $\pm$ 95
Total	595	190	7,274	

6.5 Factors Associated with Injury

6.5.1 Multivariable Models for Survey Variables

Variables shown to be associated ($p \leq 0.25$) in univariate analyses (Appendix C) were included in the multivariable analysis to determine factors associated with injury during deployment. Due to the small number of women in the unit ($n=132$), the analysis was limited to men only.

Table 12 represents the results of a multivariable analysis assessing the factors associated with injury during deployment among men in this unit. The variables used in this analysis included age, BMI, weekly unit PT frequency, average distance run per week for unit PT, days of foot patrols per week, average foot patrolling distance per patrol, average distance run per week for personal PT, resistance training frequency per week for personal PT, sprint frequency per week for personal PT, APFT sit-up repetition quartiles, and APFT 2-mile run time quartiles.

- Men age 31 years or older had 2.7 higher odds of injury than men who were 22 years or younger (OR (95% CI): 2.66 (1.34-5.27), $p=0.01$).
- Men who participated in unit PT 4 to 5 times per week had 2.1 higher odds of injury than men who completed unit PT 1 to 3 times per week (OR (95% CI): 2.13 (1.10-4.13), $p=0.02$).

Table 12. Factors Significantly Associated with Injury While Deployed Among Men (n=449)

Variable	Level of Variable	N	Odds Ratio (95% CI)	p-value*
Age	≤ 22	86	1.00	
	23 to 25	123	1.03 (0.53-2.00)	0.93
	26 to 30	141	1.34 (0.70-2.55)	0.38
	≥ 31	101	2.66 (1.34-5.27)	0.01
On average, how often do you participate in unit PT each week while deployed?	1-3 times per week	84	1.00	
	4-5 times per week	186	2.13 (1.10-4.13)	0.02
	≥ 6 times per week	181	1.62 (0.81-3.23)	0.17

Note:

*Bolted text indicates $p \leq 0.05$

Variables in the analysis: age, BMI, weekly unit PT frequency, average distance run per week for unit PT, days of foot patrols per week, average foot patrolling distance per patrol, average distance run per week for personal PT, resistance training frequency per week for personal PT, sprint frequency per week for personal PT, APFT sit-up repetition quartiles, and APFT 2-mile run time quartiles

7 Discussion

As part of the Soldier Medical Readiness Campaign, APHC was tasked to assess physical training, injuries, and injury risk factors of Soldiers in a Brigade Combat Team throughout its ARFORGEN, or deployment, cycle. This report documents injuries and injury risk factors during deployment for Soldiers in the 2-4ID (May 2011-May 2012).

7.1 Survey Findings

Most Soldiers in this brigade were male, enlisted, and between 26 and 30 years old, similar to other Army populations (Skeehan, Tribble et al. 2009, Roy, Knapik et al. 2012). The distribution of BMI among this deployed population was similar to previous reports of the average BMI of non-deployed Army Soldiers (Reynolds, Cosio-Lima et al. 2009, Grier, Canham-Chervak et al. 2013, Anderson, Grier et al. 2015), though some previous studies have found that body mass increases during deployment (Lester, Knapik et al. 2010, Nindl, Castellani et al. 2013).

7.1.1 Physical Training and Tobacco Use

Slightly under half of the Soldiers reported participating in unit PT during deployment, while almost all reported conducting personal PT. Physical fitness has been shown to change during deployment, and it is paramount for Soldiers to continue their PT due to the physical demands of deployment (Sharp, Knapik et al. 2008, Warr, Heumann et al. 2012, Nindl, Castellani et al. 2013, Roy 2015). For example, Sharp *et al.* (2008) determined that a cohort of 135 Soldiers experienced a 5 percent decrease in aerobic power and upper body anaerobic power while deployed to Afghanistan for nine months (Sharp, Knapik et al. 2008). A study of National Guard Soldiers found that body composition, strength, and endurance improved during deployment but Soldiers experienced significant declines in aerobic fitness (Warr, Heumann et al. 2012). Deployed Soldiers also acknowledge the importance of physical readiness. A post-deployment survey of 283 Soldiers in Iraq and/or Afghanistan reported the following tasks were the most important from a physical fitness perspective: acquiring and engaging targets during heavy physical exertion (96%), sending and receiving communications during heavy physical exertion (80%), conducting individual movement technique in full combat gear for 300 meters (62%), maintaining physical stamina for 72 hours (61%), and walking 10 kilometers in full combat gear under extreme conditions (Nindl, Castellani et al. 2013).

In the current study, over 80 percent of survey respondents incorporated resistance training during unit and personal PT. Studies have demonstrated that training programs that include a combination of resistance and endurance training result in higher strength and aerobic performance than endurance training alone (Wilson, Marin et al. 2012, Grier, Canham-Chervak et al. 2013). A study of female Soldiers determined that the rapid increase in physical demands from garrison to deployment resulted in increased injuries (Roy 2015). Army units should focus PT on specific occupational tasks such as the weight of the load worn and the time spent wearing loads to safely increase Soldiers' strength and endurance required for deployment missions (Sharp, Knapik et al. 2008, Roy 2015). Forty percent of respondents to this survey reported conducting traditional Army PT without incorporating cross-training, sprint training, or agility drills for their unit PT regimen. Army Field Manual 7-22 recommends adding these alternate forms of training into physical fitness training (Department of the Army 2012), as these have been shown to increase fitness and lower injury rates (Walker, Lennemann et al. 2010, Grier, Canham-Chervak et al. 2015).

Regarding tobacco use, a higher proportion of Soldiers reported being a current smoker (41%) than has been documented among all active duty Army Soldiers who smoke cigarettes (34%) (RTI International 2009) and far above the Healthy People 2020 objective of 12% (Jamal 2015). The health risks of cigarette

smoking are well-documented (U.S. Department of Health and Human Services 2014), and its association with injury are consistently observed in Army populations (Knapik 2006). Twenty-three percent of Soldiers smoked more cigarettes while deployed, which is similar to the 20% increase in smoking among all deployed Army Soldiers reported on the 2011 Health Related Behaviors Survey of Active Duty Military Personnel (Barlas 2013). Fifteen percent of Soldiers reported starting to smoke cigarettes while deployed in the current study. A study of U.S. Air Force Technical Trainees at Joint Base San Antonio between March 2011 and July 2013 found that 12.6% (n=204) of service members who had never used tobacco at baseline had initiated tobacco use in the prior 12 months of training (Little, Ebbert et al. 2017). Nineteen percent reported using smokeless tobacco, similar to what was found in the 2011 Health Related Behaviors Survey of Active Duty Military Personnel of all military personnel who reported using smokeless tobacco in the last 12 months (Barlas 2013).d

7.1.2 Injury During Deployment

Thirty percent of Soldiers reported experiencing an injury during their most recent deployment, which is slightly lower than most other studies examining injuries among deployed Soldier cohorts (Konitzer, Fargo et al. 2008, Goodman, Schoenfeld et al. 2012, Roy, Knapik et al. 2012, Warr, Heumann et al. 2012). In a study of 593 Army Service Members deployed to Iraq and Afghanistan from 2009-2010, Roy et al. (2012) found that 45 percent reported at least one injury (Roy, Knapik et al. 2012). Konitzer et al. (2008) surveyed 863 Soldiers returning from Iraq and found that 31 percent of Soldiers reported neck pain, 61 percent reported back pain, and 41 percent reported upper extremity pain (categories not mutually-exclusive) (Konitzer, Fargo et al. 2008). A study of 3,787 Soldiers at the end of a 15-month deployment to Iraq found that 19 percent (n=731) of Soldiers completing deployment required orthopedic surgical consultations, with 89.2 percent of consultations due to non-battle injuries (Goodman, Schoenfeld et al. 2012). On the contrary, a study of 150 Soldiers deployed to Iraq and Afghanistan found that only 19.5 percent of surveyed troops reported at least one non-battle injury (Skeehan, Tribble et al. 2009). Similarly, Lester et al. (2010) found that 14 percent of 73 Soldiers deployed to Iraq for 13 months reported having an injury in the previous year (Lester, Knapik et al. 2010). A number of these studies were unique (e.g., National Guard) or small populations, which may account for differences in injury incidence. In addition, unmeasured factors such as mission requirements and unit operational tempo may explain the variation in injury rates during deployment.

The most frequently injured body areas in this study (extremities and back) are similar to previous reports examining injuries among Soldiers (Jones, Cowan et al. 1993, Knapik, Ang et al. 1993, Kaufman, Brodine et al. 2000, Lincoln, Smith et al. 2002, Hauret, Taylor et al. 2010, Goodman, Schoenfeld et al. 2012, Roy, Knapik et al. 2012, Warr, Heumann et al. 2012, Roos, Boesch et al. 2015). Roy et al. (2012) found that the body regions with the highest number of injuries in Army Soldiers deployed to Afghanistan from 2009 to 2010 were the low back (17%, n=104), knee (13%, n=76), and shoulder (10%, n=59) (Roy, Knapik et al. 2012). In a study of National Guard Soldiers during a 10- to 15-month deployment, 36 percent (n=91) of musculoskeletal injuries were related to the lower extremity, 22 percent (n=55) to the upper extremity, and 17 percent (n=43) to the back (Warr, Heumann et al. 2012). Between 2001 and the end of 2006, the top five body areas injured among Army Soldiers medically air evacuated from Iraq or Afghanistan were the back, knee, wrist/hand, ankle/foot and shoulder (Hauret, Taylor et al. 2010). A review of musculoskeletal injuries among deployed Soldiers reached similar conclusions; that the most commonly injured regions are the back, knee, ankle, and shoulder (Nindl, Castellani et al. 2013). Goodman et al. (2012) studied orthopedic surgical consultations, a subset of all injuries, in a unit that had been deployed to Iraq for 15 months and found that 50.7 percent of orthopedic operations were performed on the lower extremity and 43.6 percent were performed on the upper extremity (Goodman, Schoenfeld et al. 2012). An analysis of 3,066 Physical Therapy visits by an Infantry Brigade Combat Team deployed to Afghanistan from 2006 to 2007 indicated that 21 percent (n=344) of Soldiers had lumbar spine injuries, 19 percent (n=307) had knee injuries, and 13 percent (n=205) had ankle injuries (Roy 2011). These data

suggest that although the mission might change during war, the body areas most frequently injured by Soldiers do not vary substantially across environments.

The most commonly reported types of injuries in this deployed population (pain, sprains, strains, cut/lacerations, and fractures) are typical among deployed and non-deployed Soldiers (Knapik, Ang et al. 1993, Writer, DeFraités et al. 2000, Reynolds, Cosio-Lima et al. 2009, Hauret, Taylor et al. 2010, Roy, Knapik et al. 2012). Roy *et al.* (2012) found the most common injury diagnoses among Soldiers in Iraq and Afghanistan were sprain/strains (33%, n=197), bruises (8%, n=45), and pinched nerves (6%, n=35) (Roy, Knapik et al. 2012). An earlier study of Army Soldiers medically air-evacuated from Iraq or Afghanistan determined that fractures, inflammation and pain, dislocations, sprains/strains, and internal joint derangements were the leading diagnosis categories (Hauret, Taylor et al. 2010). A study by Reynolds *et al.* (2009) examining injuries by Army occupation determined the leading traumatic injuries among infantry Soldiers were fractures (11.2%, n=27) and tears/ruptures (7.3%, n=16) (Reynolds, Cosio-Lima et al. 2009). Considering Soldiers in garrison, a study of 298 Soldiers in an infantry battalion in Alaska found that musculoskeletal pain was the most frequent type of injury reported, followed by strains and sprains (Knapik, Ang et al. 1993). Looking at all active duty Army Soldiers, in 2012 there were 240,299 acute traumatic injuries requiring outpatient visits, and 45.7% (n=109,816) were sprains/strains, 17.1% (n=41,091) were contusion/superficial injuries, and 8.3% (n=19,945) were open wounds (Marshall SW, Canham-Chervak M et al. 2014). Thus the types of injuries experienced by the 2^d Brigade, 4th ID during deployment are similar to other deployed and non-deployed Soldier populations.

Similar to other studies of Soldier cohorts, the top three mechanisms of injury in this deployed population were 'overexertion, strenuous, or repetitive movement', 'fall, jump, trip, or slip', and 'struck against or by an object or person' (Reynolds, White et al. 1999, Writer, DeFraités et al. 2000, Brushoj, Larsen et al. 2008, Reynolds, Cosio-Lima et al. 2009, Skeehan, Tribble et al. 2009, Hauret, Taylor et al. 2010, Grier, Canham-Chervak et al. 2013, Marshall SW, Canham-Chervak M et al. 2014, Roos, Boesch et al. 2015). Skeehan *et al.* (2009) estimated that 13 percent (n=43, third leading cause) of non-battle injuries were caused by falls in their cohort of 150 Soldiers deployed to Iraq and Afghanistan (Skeehan, Tribble et al. 2009). The Hauret *et al.* (2010) study of air-evacuated Soldiers determined that falls were the second leading cause of air-evacuated injuries in Iraq (18%, n=1,114) and Afghanistan (18%, n=170) (Hauret, Taylor et al. 2010). Among Army active duty Soldiers in 2012, the primary mechanism associated with injury in outpatient visits was overexertion (27%, n=111,636); falls/near falls was the second leading mechanism associated with injury hospitalizations (20%, n=335) and outpatient visits (16%, n=66,155) (Marshall SW, Canham-Chervak M et al. 2014). As demonstrated in the current survey data and previous studies, overexertion and falls are leading mechanisms of injury among Soldiers.

While the top three activities associated with injury in this deployed population were 'walking, hiking, and marching', 'lifting or moving heavy objects', and 'stepping/climbing', previous studies of deployed Soldier cohorts have found a variety of activities associated with injury (Writer, DeFraités et al. 2000, Reynolds, Cosio-Lima et al. 2009, Skeehan, Tribble et al. 2009, Hauret, Taylor et al. 2010, Roy, Knapik et al. 2012, Marshall SW, Canham-Chervak M et al. 2014). Roy *et al.* (2012) used slightly different activity categories, but also found activities related to walking/marching and lifting were among the top three activities associated with injury during deployment, with 10 percent (n=59) of injuries due to lifting and carrying, 10 percent (n=57) due to dismounted patrolling, and 8 percent (n=48) due to physical training among Soldiers deployed to Iraq and Afghanistan (Roy, Knapik et al. 2012). An earlier study of 3,367 troops deployed to Iraq and Afghanistan from 2005 to 2006 found that 22 percent of non-battle injuries were due to sports/athletics and 20 percent were due to heavy gear/lifting (Skeehan, Tribble et al. 2009), which is higher than that found in this deployed population and could be due to variations in job tasks between units. A study by Reynolds *et al.* (2009) examining injuries by Army occupation found that 88 percent of injuries in the infantry were attributed to duty-related physical fitness and marching with packs, and that activity associated with injury changed by occupation (Reynolds, Cosio-Lima et al. 2009). In that same study, over half of injuries in the construction engineers and combat artillery were due to duty-related

physical training while 30 percent were related to occupational activities; 80 percent of injuries in the Special Forces Soldiers were related to physical training and sports (Reynolds, Cosio-Lima et al. 2009). Another study found that the leading causes of injury among 31,728 Soldiers air-evacuated from Iraq and Afghanistan were sports and physical training (19–21%), falls/jumps (18%), motor vehicle-related incidents (11–16%), and crushing or blunt trauma (12–16%) (Hauret, Taylor et al. 2010). These two studies contrast with our results, in which sports/recreation and riding or driving in a motor vehicle were not in the top five activities associated with injury. Injuries that require air evacuation and/or hospitalization are more serious than the injuries reported by Soldiers in this deployed unit, which likely explains the differences in activities leading to injury.

7.2 Factors Associated with Injury

7.2.1 Age

Soldiers in the oldest age group had higher odds of injury than Soldiers in the youngest age group. Older age has previously been found to be associated with injury among deployed military populations (Konitzer, Fargo et al. 2008, Skeeahan, Tribble et al. 2009, Roy, Knapik et al. 2012). Roy *et al.* (2012) estimated that Soldiers older than 25 years had higher odds of injury than Soldiers younger than 25 years in a Stryker Brigade Combat Team deployed to Afghanistan in 2009 and 2010 (Roy, Knapik et al. 2012). A survey of Soldiers deployed in Iraq in 2006 found that older Soldiers self-reported more musculoskeletal pain than younger Soldiers (Konitzer, Fargo et al. 2008). An analysis of military personnel leaving Iraq or Afghanistan between 2005 and 2006 estimated that increasing age was associated with increased incidence of injury, but this association did not remain significant in a multivariable model (Skeeahan, Tribble et al. 2009). It has been suggested that higher susceptibility to injury among older Soldiers may be due to age-related declines in fitness (Knapik, Jones et al. 1996, Knapik, Sharp et al. 2001) or prior history of injury (Knapik, McCollam et al. 2000, Schneider, Bigelow et al. 2000, Knapik JJ, Spiess et al. 2008). Roy *et al.* (2012) also suggest that there is more physical labor in a deployed environment and it is likely that higher ranks (i.e. older Soldiers) are participating in physical labor in addition to managerial duties (Roy, Knapik et al. 2012).

7.2.2 Unit PT Frequency

It was found that completing unit PT 4 to 5 times per week increased the odds of injury among deployed Soldiers. A *post hoc* comparison found that Soldiers who conducted unit PT 4 or more times per week ran a weekly average of 9.2 miles, while those who conducted unit PT ≤ 3 times per week ran a weekly average of 6.9 miles (difference: 2.3 miles, $p < 0.01$). Previous research has found that higher weekly running mileage results in higher injury risk (Jones, Cowan et al. 1994, Kaufman, Brodine et al. 2000, Kraemer and Szivak 2012, Grier, Canham-Chervak et al. 2013, Nindl, Castellani et al. 2013, Roos, Boesch et al. 2015). Grier *et al.* (2013) found that Soldiers who ran greater than 16 miles per week for unit PT had 2.24 times (95% CI 1.67-4.43) the odds of injury compared with those who ran 7 or less miles per week (Grier, Canham-Chervak et al. 2013). Similarly, Tomlinson *et al.* (1987) determined that Soldiers who exercised 10 or more hours per week were at increased injury risk compared to those who exercised 0 to 9 hours per week (Tomlinson, Lednar et al. 1987). A study of civilian runners and injury found that as the frequency, duration, or total amount of training increases, injuries also increase until a point at which injuries increase disproportionately with changes in physical fitness (Pollock, Gettman et al. 1977). Soldiers are subjected to increased stress and more demanding occupational tasks while deployed than during training or garrison activities, thereby increased unit PT, in particular when focused primarily on running, may result in increased risk of injury above the potential benefit to physical fitness.

7.3 Limitations

This study has several limitations. Survey administration was subject to availability of Soldiers and as such, possible sampling bias. Due to the retrospective nature of the survey, Soldiers were asked to recall injuries and activities over a 12-month period. It is possible that their recall was not accurate due to the time frame. However, the survey allowed for the collection of detailed information specific to Army OTSG interests and needs as well as information on deployed Soldier injuries, which are not readily available from existing electronic medical data. Self-reported surveys also enable capture of injuries that did not require medical attention. Lastly, due to scheduling challenges, FMS testing was administered by this unit post-deployment only and as a result these data were not included in risk factor analyses predicting injury risk during deployment. However, the FMS has been found to have low predictive value and misclassification of injury risk among physically active Soldiers (Bushman, Grier et al. 2015).

8 Conclusions and Recommendations

Prevention of injury is crucial to preserving Soldier and unit readiness during deployment. Approximately one-third (30%) of Soldiers in the unit sustained one or more injuries during deployment. Age and participation in unit PT 4 or more times per week was associated with injury. Despite training in the Iron Horse Optimization Program prior to deployment, over 40 percent reported that unit PT centered on traditional PT, or training for the APFT. Resistance training was common, with 84 percent reporting participation in resistance training on their own while deployed. Soldiers, even in deployed environments, would benefit from guidance and instruction on appropriate physical fitness techniques and regimens; numerous options are available in FM 7-22. Maintaining physical fitness and balancing PT with other physical demands while deployed is important for Soldier injury prevention. Future work should ensure variation in training in the deployed environment and consider different PT programs to determine options for maintaining physical fitness, avoiding overtraining, and preventing injury while deployed, both during unit and personal PT.

9 Point of Contact

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Appendix A

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Appendix B

Functional Movement Screen Test Results

Table B-1. Post-Deployment Functional Movement Screen* (FMS) scores (n=2,700)

Variable	Level of Variable	Total (%)
Total Score	≤ 14 points	441 (37.5)
	15-16 points	283 (24.0)
	17-18 points	346 (29.4)
	≥ 19 points	107 (9.1)
Best Crossover Hop (Right)	≤ 370.0 centimeters	249 (21.2)
	370.1-440.0 centimeters	271 (23.0)
	440.1-490.0 centimeters	212 (18.0)
	≥ 490.1 centimeters	237 (20.1)
Best Crossover Hop (Left)	≤ 370.0 centimeters	264 (22.4)
	370.1-440.0 centimeters	249 (21.2)
	440.1-500.0 centimeters	239 (20.3)
	≥ 500.1 centimeters	217 (18.4)
Best Vertical Jump	≤ 18.0 centimeter	225 (19.1)
	18.1-20.0 centimeters	224 (19.0)
	20.1-23.0 centimeters	313 (26.6)
	≥ 23.1 centimeters	216 (18.4)
Un-weighted 300-yard shuttle run time	≤ 67.0 seconds	290 (24.6)
	67.1-70.0 seconds	217 (18.4)
	70.1-75.0 seconds	245 (20.8)
	≥ 75.1 seconds	177 (15.0)
Weighted 300-yard shuttle run time	≤ 80.0 seconds	273 (23.2)
	80.1-85.0 seconds	217 (18.4)
	85.1-90.0 seconds	162 (13.8)
	≥ 90.1 seconds	178 (15.1)
Pull-ups	≤ 2 repetitions	257 (21.8)
	3-5 repetitions	267 (22.7)
	6-9 repetitions	197 (16.7)
	≥ 10 repetitions	250 (21.2)

Note:

*FMS involves 7 tests: deep squat, hurdle step, in-line lunge, shoulder mobility, active straight leg raise, trunk stability push-ups, and rotary stability (Minick, Kiesel et al. 2010). Each test has a range of 0-3 points with a maximum possible score of 21 if the individual demonstrates sound biomechanics throughout each movement and does not experience pain. If pain is present, the individual scores a zero for that particular test.

Appendix C

Univariate Analysis Results

Table C-1. Univariate Logistic Regression Results for Survey Demographic Data (Men Only)

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value*
Gender	Men	1,912	30.2	N/A	N/A	
Age	≤ 22	376	24.2	1.00		<0.01
	23 to 25	491	27.5	1.19 (0.87-1.62)	0.27	
	26 to 30	563	30.4	1.37 (1.02-1.84)	0.04	
	≥ 31	482	37.6	1.88 (1.40-2.54)	<0.01	
BMI	Normal	679	24.0	1.00		<0.01
	Low Overweight	655	31.6	1.38 (1.04-1.82)	0.02	
	High Overweight	351	33.9	1.75 (1.28-2.39)	< 0.01	
	Obese	213	39.9	1.99 (1.37-2.89)	< 0.01	
Rank	E1-E4	1059	29.9	1.22 (0.79-1.89)	0.36	0.45
	E5-E9	735	31.4	1.31 (0.84-2.05)	0.03	
	Officer/Warrant Officer	116	25.9	1.00		
Battalion	3-16 FA	176	34.1	1.57 (1.03-2.39)	0.04	0.08
	1-10 CAV	236	25.4	0.79 (0.56-1.10)	0.16	
	1-67 AR	301	35.2	1.65 (0.14-2.38)	0.01	
	2-8 IN	641	30.3	1.32 (0.95-1.83)	0.10	
	204 BSB	258	24.8	1.00		
	2-4 STB	277	30.7	1.34 (0.92-1.96)	0.13	
	HHC/HHT	13	23.1	-	-	
MOS Group	Infantry	510	32.5	1.70 (1.07-2.71)	0.03	0.16
	Repairer and Maintenance	198	35.4	1.92 (1.15-3.23)	0.01	
	Armor	183	24.6	1.15 (0.67-1.98)	0.62	
	Supply and Logistics	152	31.6	1.62 (0.94-2.81)	0.08	
	Field and Air Defense Artillery	122	22.1	1.00		
	Medical Corp	119	30.3	1.53 (0.85-2.72)	0.15	
	Transportation	113	32.7	1.71 (0.96-3.06)	0.07	
	Signals/Communication	90	25.6	1.21 (0.64-2.29)	0.56	
	Engineers	83	37.3	2.10 (1.13-3.89)	0.02	
	Military Intelligence, Psychological operations, and Electronic Warfare	73	27.4	1.33 (0.68-2.59)	0.41	
	Other**	79	26.6	1.27 (0.66-2.46)	0.47	
Physical Demand	Very Heavy	1,196	31.7	1.60 (0.75-3.39)	0.22	0.47
	Heavy	124	29.0	1.41 (0.61-3.26)	0.42	
	Moderately Heavy	230	27.4	1.30 (0.59-2.88)	0.52	
	Medium-Light	40	22.5	1.00		
	Not Available	132	28.0	1.34 (0.58-3.09)	0.49	

Note:

*Bolded text indicates overall $p \leq 0.25$.

**Other includes: Military Police, Support/Administration, Chemical Warfare, Explosives, and Ammunition

Table C-2. Univariate Logistic Regression Results for Unit PT Data (Men Only)

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value*
Did you participate in unit PT while deployed?	Yes	853	34.2	1.41 (1.16-1.71)	< 0.01	< 0.01
	No	1,044	27.0	1.00		
On average, how often do you participate in unit PT each week while deployed?	1-3 times per week	178	30.3	1.00		0.3
	4-5 times per week	344	39.5	1.50 (1.02-2.21)	0.04	
	6 times per week or more	322	31.1	1.03 (0.70-1.54)	0.87	
Did your unit continue with the Iron Horse Performance Optimization Exercise Program (IHPO) or did your unit perform traditional army PT while deployed?	Continued IHPO program	55	29.1	0.84 (0.45-1.57)	0.58	0.84
	Continued modified IHPO program	75	36.0	1.15 (0.68-1.94)	0.60	
	Performed army traditional PT	344	32.8	1.00		
	Another exercise program performed	169	35.5	1.13 (0.76-1.66)	0.55	
	Not sure	195	35.9	1.14 (0.79-1.66)	0.47	
If your unit performed cross-training types of exercises, approximately how many times per week did they perform them?	No Cross-training	351	33.0	1.00		0.56
	<1 time per week	228	34.6	1.07 (0.76-1.53)	0.69	
	1-2 times per week	159	30.8	0.90 (0.60-1.35)	0.62	
	3-4 times per week	79	41.8	1.45 (0.88-2.39)	0.14	
	5 times per week or more	18	33.3	1.01 (0.37-2.77)	0.98	
On average, how many times per week did your unit perform distance running?	No distance running	237	35.9	1.00		0.57
	<1 time per week	66	25.8	0.62 (0.34-1.14)	0.13	
	1-2 times per week	228	32.9	0.86 (0.60-1.29)	0.50	
	3-4 times per week	267	36.0	1.00 (0.70-1.45)	0.98	
	> 4 times per week	51	35.3	0.98 (0.52-1.84)	0.94	
On average, how far did you run when your unit performed distance running?	Did not perform	237	35.9	1.00		0.62
	<1 mile	12	16.7	0.36 (0.08-1.67)	0.19	
	1 mile	17	23.5	0.55 (0.17-1.74)	0.31	
	2-3 miles	434	34.1	0.93 (0.66-1.29)	0.65	
	4 miles or more	148	34.5	0.94 (0.61-1.45)	0.78	
Avg. weekly distance running (unit PT)	<= 4 miles per week	218	28.9	1.00		0.16

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value*
	5-6 miles per week	138	37.0	1.44 (0.92-2.27)	0.11	
	7-10 miles per week	120	31.7	1.14 (0.70-1.85)	0.59	
	11+ miles per week	137	39.4	1.60 (1.02-2.51)	0.04	
On Average, how many times per week did your unit perform sprint or interval-style running?	Did not perform sprint or interval running while deployed	304	34.2	1.00		0.67
	<1 time per week	152	38.2	1.19 (0.79-1.78)	0.41	
	1-2 times per week	316	32.3	0.92 (0.66-1.28)	0.61	
	3-4 times per week or more	76	34.2	1.00 (0.59-1.70)	1.00	
On average, how many times per week did your unit perform calisthenics?	Did not perform calisthenics while deployed	314	31.2	1.00		0.49
	<1 time per week	126	34.9	0.1.18 (0.76-1.83)	0.45	
	1-2 times per week	221	34.8	1.18 (0.82-1.70)	0.38	
	≥ 3 times per week	182	37.9	1.35 (0.92-1.97)	0.13	
On average, how many times per week did your unit perform resistance training?	Did not perform resistance training while deployed	116	30.2	1.00		0.85
	<1 time per week	45	37.8	1.41 (0.68-2.89)	0.36	
	1-2 times per week	153	33.3	1.16 (0.69-1.95)	0.58	
	3-4 times per week	223	35.4	1.27 (0.78-2.06)	0.33	
	>4 times per week	306	35.0	1.24 (0.78-1.97)	0.35	
On average, how many times per week did your unit perform agility drills?	Unit did not perform agility drills while deployed	572	33.0	1.00		0.69
	<1 time per week	120	37.5	1.22 (0.81-1.83)	0.35	
	1-2 times per week	104	37.5	1.22 (0.79-1.88)	0.38	
	3-4 times per week or more	49	32.7	0.98 (0.53-1.83)	0.96	
On average, how many days per week were you involved in	None	773	27.6	1.00		0.10
	1 day / week or less	293	29.0	1.07 (0.80-1.45)	0.64	
	2-4 days / week	317	34.4	1.38 (1.04-1.82)	0.02	

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value*
operations requiring foot patrolling?	5-7 days / week	526	32.1	1.24 (0.98-1.58)	0.08	
On average, what distance did you walk per day on each foot patrol?	No Foot Patrolling Duties	769	27.4	1.00		<0.01
	2 miles or less	338	27.5	1.00 (0.75-1.34)	0.98	
	3-5 miles	589	31.9	1.24 (0.98-1.57)	0.07	
	6 miles or more	211	39.3	1.71 (1.25-2.36)	<0.01	
Foot patrolling distance per week	None	747	27.4	1.00		0.01
	<= 4 miles per week	303	29.0	1.09 (0.81-1.45)	0.60	
	5-15 miles per week	252	25.8	0.92 (0.66-1.27)	0.61	
	16-28 miles per week	308	35.7	1.47 (1.11-1.95)	<0.01	
	29+ miles per week	248	36.7	1.53 (1.13-2.08)	<0.01	

Note:

*Bolded text indicates overall p ≤ 0.25.

Table C-3. Univariate Logistic Regression Results for Personal PT Data (Men Only)

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value*
Did you perform PT on your own time while deployed?	No	59	23.7	1.00		0.27
	Yes	1,853	30.4	1.41 (0.77-2.58)	0.27	
On average, how many times per week did you perform distance running for personal PT?	Did not perform distance running while deployed	365	34.2	1.00		0.45
	<1 time per week	198	28.3	0.76 (0.52-1.10)	0.15	
	1-2 times per week	524	30.2	0.83 (0.62-1.10)	0.20	
	3-4 times per week	554	29.4	0.80 (0.60-1.06)	0.12	
	5 times per week or more	260	28.5	0.76 (0.54-1.08)	0.13	
On average, how far did you run when you performed distance runs for personal PT?	Did not perform distance runs	341	34.6	1.00		0.06
	1 mile or less	139	26.6	0.69 (0.44-1.06)	0.09	
	2-3 miles	992	31.1	0.85 (0.66-1.11)	0.24	
	4-5 miles	303	26.1	0.67 (0.47-0.94)	0.02	
	6 miles or more	49	20.4	0.48 (0.23-1.01)	0.05	
Average weekly distance personal PT	<= 2 miles per week	296	31.1	1.00		0.90
	3-6 miles per week	547	29.1	0.91 (0.67-1.24)	0.54	
	7-9 miles per week	247	28.3	0.88 (0.61-1.27)	0.49	

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value*
	10+ miles per week	450	29.3	0.92 (0.67-1.27)	0.61	
How many days a week did you perform aerobic endurance that did not involve running?	Did not perform aerobic endurance	566	30.6	1.00		0.31
	<1 time per week	248	25.4	0.77 (0.55-1.08)	0.14	
	1-2 times per week	618	30.3	0.99 (0.77-1.26)	0.91	
	3-4 times per week	351	32.5	1.09 (0.82-1.45)	0.54	
	5 or more times per week	111	35.1	1.26 (0.80-1.89)	0.34	
On days when you performed aerobic endurance that did not involve running, how long did you exercise each day, on average?	Did not perform aerobic endurance	497	29.2	1.00		0.63
	≤ 30 minutes	416	28.6	0.97 (0.73-1.30)	0.85	
	30-60 minutes	740	31.8	1.13 (0.88-1.45)	0.33	
	≥ 60 minutes	236	31.4	1.11 (0.79-1.55)	0.55	
On average, how many times per week did you perform resistance training for personal PT?	No weight training	181	25.4	1.00		0.02
	< 1 time per week	112	21.4	0.80 (0.46-1.40)	0.44	
	1-2 times per week	314	29.3	1.22 (0.80-1.84)	0.35	
	3-4 times per week	558	34.8	1.56 (1.07-2.28)	0.02	
	≥ 5 times per week	727	29.8	1.25 (0.86-1.81)	0.24	
On average, how many times per week did you perform sprint or interval-style running for personal PT?	Did not perform sprint or interval style running	853	33.4	1.00		0.01
	<1 time per week	320	25.0	0.66 (0.50-0.89)	0.01	
	1-2 times per week	538	27.0	0.74 (0.58-0.93)	0.01	
	3 times per week or more	199	33.7	1.01 (0.73-1.40)	0.94	
What program is your personal physical training program based upon?	Did not have a specific personal physical training program	562	31.0	1.00		0.12
	Traditional Army PT	210	29.0	0.91 (0.64-1.29)	0.61	
	Traditional Army PT + Other	34	52.9	2.51 (1.25-5.04)	0.01	
	Cross-training	126	25.4	0.76 (0.49-1.18)	0.22	
	Extreme Conditioning Programs	276	28.3	0.88 (0.64-1.21)	0.42	
	Extreme Conditioning Programs + Other	182	31.3	1.02 (0.71-1.46)	0.93	

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value*
	Other	123	30.9	1.00 (0.65-1.52)	0.99	

Note:

*Bolded text indicates overall $p \leq 0.25$.**Table C-4. Univariate Logistic Regression Results for APFT Results (Men)**

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value*
Year of most recent APFT test	2011	575	30.4	1.00		0.71
	2012	1,271	29.6	0.96 (0.77-1.19)	0.71	
APFT Number of Pushups	≤ 56 pushups	436	30.5	1.06 (0.79-1.43)	0.67	0.95
	57-67 pushups	402	30.3	1.06 (0.78-1.43)	0.72	
	68-76 pushups	416	29.1	1.00 (0.74-1.34)	0.97	
	≥ 77 pushups	418	29.2	1.00		
APFT Number of Sit-ups	≤ 60 sit-ups	548	31.8	1.39 (1.04-1.86)	0.02	0.12
	61-67 sit-ups	300	30.0	1.28 (0.92-1.79)	0.15	
	68-76 sit-ups	420	31.4	1.37 (1.01-1.86)	0.04	
	≥ 77 sit-ups	403	25.1	1.00		
APFT Run Time Values	≤ 13.97 minutes	355	28.2	1.00		0.02
	13.98-14.80 minutes	343	23.3	0.78 (0.55-1.09)	0.14	
	14.81-15.75 minutes	370	31.4	1.16 (0.85-1.60)	0.35	
	≥ 15.76 minutes	329	34.0	1.32 (0.94-1.82)	0.10	

Note:

*Bolded text indicates overall $p \leq 0.25$.**Table C-5. Univariate Logistic Regression Results for Sports Participation (Men Only)**

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value
Did you participate in sports?	Yes	947	30.1	0.99 (0.81-1.20)	0.91	0.91
	No	963	30.3	1.00		
How many days per week on average did you participate in sports activities?	Did not participate	962	30.4	1.00		0.48
	< 1 day / week	399	31.8	1.07 (0.83-1.38)	0.59	
	1 day / week	190	33.2	1.14 (0.82-1.59)	0.44	
	2 days / week	176	26.7	0.84 (0.58-1.20)	0.33	
	≥ 3 days / week	163	26.4	0.82 (0.57-1.20)	0.31	
On the days you participated in sports activities, how long did you participate each day on average?	Did not participate	962	30.4	1.00		0.65
	30 minutes or less	164	34.1	1.19 (0.84-1.69)	0.33	
	45 minutes or less	179	31.8	1.07 (0.76-1.51)	0.69	
	1 hour	241	31.5	1.06 (0.78-1.43)	0.72	
	1.5 hours	147	28.6	0.92 (0.63-1.35)	0.66	
	2 hours or more	174	25.9	0.80 (0.56-1.15)	0.23	
What sports did you participate in?	Did not participate in sports activities	962	30.4	1.00		0.55
	Basketball	250	30.8	1.02 (0.76-1.38)	0.89	
	Boxing	12	33.3	1.15 (0.34-3.84)	0.82	
	Football	195	31.3	1.04 (0.75-1.46)	0.80	

	Martial Arts	12	50.0	2.29 (0.73-7.17)	0.15	
	Soccer	39	20.5	0.59 (0.27-1.30)	0.19	
	Softball	7	57.1	3.06 (0.68-13.76)	0.14	
	Other	81	30.9	1.02 (0.63-1.67)	0.92	
	Multiple	321	28.0	0.89 (0.68-1.18)	0.43	

Table C-6. Univariate Logistic Regression Results for Tobacco Use during Deployment (Men Only)

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value
Cigarette Smoking while Deployed	Never Smoked/ Currently Not Smoking	872	31.2	1.00		0.47
	Smoked while deployed	1,008	29.7	0.93 (0.76-1.13)	0.47	
How Many More Cigarettes While Deployed	≤ 8	98	32.7	1.00		0.39
	9-10	91	34.1	1.07 (0.58-1.95)	0.84	
	11-20	128	25.8	0.72 (0.40-1.28)	0.26	
	≥ 21	63	36.5	1.19 (0.61-2.30)	0.61	
Smokeless Tobacco while Deployed	Never used/ Currently not using Smokeless Tobacco	1,399	30.5	1.00		0.64
	Used Smokeless Tobacco while deployed	490	29.4	0.95 (0.76-1.19)	0.64	

Table C-7. Univariate Logistic Regression Results for Self-Reported Ability (Men Only)

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value
How would you rate your endurance?	Far less than average	32	34.4	1.25 (0.59-2.62)	0.56	0.65
	Less than average	190	34.7	1.27 (0.91-1.76)	0.16	
	Average	957	29.6	1.00		
	Greater than average	598	29.6	1.00 (0.80-1.25)	0.99	
	Far greater than average	124	29.0	0.97 (0.65-1.47)	0.90	
How would you rate your sprint speed?	Far less than average	32	59.4	3.60 (1.75-7.39)	<0.01	<0.01
	Less than average	190	37.9	1.50 (1.09-2.08)	0.01	
	Average	963	28.9	1.00		
	Greater than average	584	28.9	1.00 (0.80-1.26)	0.98	
	Far greater than average	135	26.7	0.90 (0.60-1.34)	0.60	
How would you rate your strength?	Far less than average	14	21.4	0.69 (0.19-2.50)	0.57	0.27
	Less than average	89	36.0	1.42 (0.90-2.25)	0.13	
	Average	980	28.3	1.00		

Variable	Level of Variable	N	% Injured	Odds Ratio (95% CI)	p-value	Overall p-value
	Greater than average	682	32.3	1.21 (0.98-1.49)	0.08	
	Far greater than average	138	31.9	1.19 (0.81-1.74)	0.38	
How would you rate your flexibility?	Far less than average	83	41.0	1.76 (1.11-2.79)	0.02	0.12
	Less than average	392	30.6	1.12 (0.86-1.45)	0.39	
	Average	937	28.3	1.00		
	Greater than average	402	30.8	1.13 (0.88-1.46)	0.34	
	Far greater than average	91	35.2	1.38 (0.87-2.16)	0.17	
How would you rate your core strength?	Far less than average	18	38.9	1.58 (0.61-4.11)	0.35	<0.01
	Less than average	159	43.4	1.90 (1.35-2.68)	<0.01	
	Average	1,073	28.7	1.00		
	Greater than average	559	29.0	1.01 (0.81-1.27)	0.91	
	Far greater than average	95	30.5	1.09 (0.69-1.72)	0.71	
How would you rate your balance?	Far less than average	21	33.3	1.13 (0.45-2.83)	0.79	0.81
	Less than average	143	32.9	1.11 (0.76-1.61)	0.59	
	Average	1,070	30.7	1.00		
	Greater than average	537	28.3	0.89 (0.71-1.12)	0.33	
	Far greater than average	131	29.8	0.96 (0.65-1.43)	0.84	
How would you rate your agility?	Far less than average	22	40.9	1.62 (0.69-3.83)	0.27	0.06
	Less than average	113	41.6	1.67 (1.12-2.48)	0.01	
	Average	1,069	29.9	1.00		
	Greater than average	573	28.3	0.92 (0.74-1.15)	0.48	
	Far greater than average	122	28.7	0.94 (0.62-1.42)	0.78	
How would you rate your body fat?	Far less than average	199	22.1	0.59 (0.41-0.84)	<0.01	0.01
	Less than average	469	26.4	0.74 (0.58-0.95)	0.02	
	Average	902	32.6	1.00		
	Greater than average	273	33.3	1.03 (0.78-1.38)	0.82	
	Far greater than average	61	36.1	1.17 (0.68-2.00)	0.58	

Appendix D

Multivariable Analysis Results

Table D-1. Factors Associated with Injury While Deployed Among Male Soldiers (n=449)

Variable	Level of Variable	N	Odds Ratio (95% CI)	p-value*
Age	≤ 22	86	1.00	
	23 to 25	123	1.03 (0.53-2.00)	0.93
	26 to 30	141	1.34 (0.70-2.55)	0.38
	≥ 31	101	2.66 (1.34-5.27)	0.01
BMI	Underweight-Normal	167	1.00	
	Low Overweight	159	1.14 (0.67-1.95)	0.63
	High Overweight	74	0.80 (0.10-1.55)	0.50
	Obese	51	1.91 (0.90-4.08)	0.09
On average, how often do you participate in unit PT each week while deployed?	1-3 times per week	84	1.00	
	4-5 times per week	186	2.13 (1.10-4.13)	0.02
	≥ 6 times per week	181	1.62 (0.81-3.23)	0.17
Avg. weekly distance running (unit PT)	≤ 4 miles per week	151	1.00	
	5-6 miles per week	98	1.25 (0.67-2.32)	0.48
	7-10 miles per week	92	1.05 (0.55-1.99)	0.89
	≥ 11 miles per week	110	1.64 (0.85-3.17)	0.14
On average, how many days per week were you involved in operations requiring foot patrolling?	None	205	1.00	
	≤ 1 day / week	86	0.50 (0.12-2.06)	0.34
	2-4 days / week	62	0.92 (0.20-4.19)	0.91
	5-7 days / week	98	0.57 (0.13-2.58)	0.46
Foot patrolling distance per patrol (miles)	None	206	1.00	
	≤ 2 miles	95	2.09 (0.51-8.52)	0.30
	3-5 miles	115	1.83 (0.43-7.92)	0.42
	≥ 6 miles	35	1.80 (0.35-9.32)	0.48
On average, how far did you run when you performed distance runs for personal PT?	Did not perform distance runs	31	1.00	
	≤ 1 mile	38	0.85 (0.27-2.72)	0.78
	2-3 miles	271	0.80 (0.32-2.02)	0.64
	4-5 miles	94	0.70 (0.25-1.96)	0.50
	6 miles or more	17	0.48 (0.10-2.24)	0.35
On average, how many times per week did you perform resistance training for personal PT?	No weight training	37	1.00	
	< 1 time per week	16	0.60 (0.12-3.00)	0.53
	1-2 times per week	80	1.07 (0.40-2.89)	0.89
	3-4 times per week	148	2.34 (0.93-5.89)	0.07
	≥ 5 times per week	170	1.43 (0.57-3.59)	0.45
On average, how many times per week did you perform sprint or interval-style running for personal PT?	Did not perform sprint or interval style running	141	1.00	
	<1 time per week	79	0.79 (0.40-1.53)	0.48
	1-2 times per week	160	0.73 (0.42-1.26)	0.26
	≥ 3 times per week	71	0.52 (0.25-1.05)	0.07
APFT Sit-ups	≤ 60 sit-ups	144	0.94 (0.51-1.85)	0.94

Variable	Level of Variable	N	Odds Ratio (95% CI)	p-value*
APFT Two-mile Run time	61-67 sit-ups	87	1.24 (0.62-2.46)	0.54
	68-76 sit-ups	113	1.23 (0.66-2.30)	0.52
	≥ 77 sit-ups	107	1.00	
	≤ 13.97 minutes	109	1.00	
	13.98-14.80 minutes	104	1.03 (0.53-1.97)	0.94
	14.81-15.75 minutes	119	1.56 (0.84-2.93)	0.16
	≥ 15.76 minutes	119	1.28 (0.65-2.53)	0.48

Note:

*Bolded text indicates $p \leq 0.05$.

Appendix E

Additional Survey Questions: Descriptive Results

Table E-1. Summary of Self-Reported Ability by Gender

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
Endurance Rating	Far Less Than Average	34 (1.7)	1 (0.8)	35 (1.7)
	Less Than Average	194 (10.0)	10 (7.6)	204 (9.8)
	Average	977 (50.2)	88 (67.2)	1,065 (51.2)
	Greater Than Average	617 (31.7)	28 (21.4)	645 (31.0)
	Far Greater Than Average	126 (6.5)	4 (3.1)	130 (6.3)
Sprint Speed Rating	Far Less Than Average	34 (1.7)	7 (5.3)	41 (2.0)
	Less Than Average	192 (9.8)	20 (15.2)	212 (10.2)
	Average	987 (50.6)	90 (68.2)	1,077 (51.7)
	Greater Than Average	600 (30.8)	13 (9.8)	613 (29.4)
	Far Greater Than Average	138 (7.1)	2 (1.5)	140 (6.7)
Strength Rating	Far Less Than Average	14 (0.7)	2 (1.5)	16 (0.8)
	Less Than Average	89 (4.6)	13 (9.8)	102 (4.9)
	Average	1,001 (51.4)	81 (61.4)	1,082 (52.0)
	Greater Than Average	700 (35.9)	33 (25.0)	733 (35.2)
	Far Greater Than Average	145 (7.4)	3 (2.3)	148 (7.1)
Flexibility Rating	Far Less Than Average	84 (4.3)	4 (3.0)	88 (4.2)
	Less Than Average	401 (20.5)	15 (11.4)	416 (20.0)
	Average	960 (49.2)	75 (56.8)	1,035 (49.7)
	Greater Than Average	415 (21.3)	29 (22.0)	444 (21.3)
	Far Greater Than Average	92 (4.7)	9 (6.8)	101 (4.8)
Core Strength Rating	Far Less Than Average	18 (0.9)	3 (2.3)	21 (1.0)
	Less Than Average	164 (8.4)	10 (7.6)	174 (8.4)
	Average	1,098 (56.3)	82 (62.1)	1,180 (56.6)
	Greater Than Average	573 (29.4)	30 (22.7)	603 (28.9)
	Far Greater Than Average	98 (5.0)	7 (5.3)	105 (5.0)
Balance Rating	Far Less Than Average	21 (1.1)	2 (1.5)	23 (1.1)
	Less Than Average	146 (7.5)	11 (8.3)	157 (7.5)
	Average	1,094 (56.1)	91 (68.9)	1,185 (56.9)
	Greater Than Average	553 (28.4)	25 (18.9)	578 (27.8)
	Far Greater Than Average	135 (6.9)	3 (2.3)	138 (6.6)
Agility Rating	Far Less Than Average	23 (1.2)	2 (1.5)	25 (1.2)
	Less Than Average	118 (6.1)	13 (9.8)	131 (6.3)
	Average	1,092 (56.1)	96 (72.7)	1,188 (57.2)
	Greater Than Average	588 (30.2)	20 (15.2)	608 (29.3)
	Far Greater Than Average	125 (6.4)	1 (0.8)	126 (6.1)
Body Fat Rating	Far Less Than Average	202 (10.4)	9 (6.9)	211 (10.1)
	Less Than Average	481 (24.7)	24 (18.3)	505 (24.3)
	Average	927 (47.5)	83 (63.4)	1,010 (48.5)
	Greater Than Average	278 (14.2)	13 (9.9)	291 (14.0)
	Far Greater Than Average	63 (3.2)	2 (1.5)	65 (3.1)

Table E-2. Summary of Self-Reported Diet by Gender

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
While deployed, how healthy is / was your overall diet?	Excellent	106 (5.4)	5 (3.8)	111 (5.3)
	Very Good	315 (16.1)	22 (16.7)	337 (16.2)
	Good	752 (38.5)	57 (43.2)	809 (38.8)
	Fair	555 (28.4)	39 (29.5)	594 (28.5)
	Poor	225 (11.5)	9 (6.8)	234 (11.2)
While deployed, how many times per week did you eat breakfast?	Never	113 (5.8)	5 (3.8)	118 (5.7)
	1-2 times per week	483 (24.7)	38 (28.8)	521 (25.0)
	3-4 times per week	599 (30.6)	34 (25.8)	633 (30.3)
	5-7 times per week	760 (38.9)	55 (41.7)	815 (39.1)
While deployed, what was typically your largest meal during the day?	Breakfast	336 (17.2)	26 (19.7)	362 (17.4)
	Lunch	300 (15.4)	23 (17.4)	323 (15.5)
	Dinner	1,024 (52.4)	53 (40.2)	1,077 (51.7)
	All meals were same size	293 (15.0)	30 (22.7)	323 (15.5)
While deployed, did you eat at the DFAC?	Yes	1,612 (82.5)	132 (100.0)	1,744 (83.6)
	No	341 (17.5)	0 (-)	341 (16.4)
While deployed, how many meals per week did you eat at the DFAC?	None	341 (17.5)	0 (-)	341 (16.4)
	1-3 meals	288 (14.7)	26 (19.7)	314 (15.1)
	4-6 meals	217 (11.1)	12 (9.1)	229 (11.0)
	7-10 meals	286 (14.6)	23 (17.4)	309 (14.8)
	>10 meals	821 (42.0)	71 (53.8)	892 (42.8)
While deployed, did you use nutrition cards / labels in the DFAC to help guide food decisions?	Always	150 (7.7)	17 (12.9)	167 (8.0)
	Sometimes	516 (26.6)	56 (42.4)	572 (27.6)
	Never	692 (35.6)	39 (29.5)	731 (35.2)
	What Labels?	585 (30.1)	20 (15.2)	605 (29.2)
While deployed, during a typical week, how many meals did you get from fast food restaurants?	None	1,712 (88.1)	109 (82.6)	1,821 (87.7)
	1-3 meals	189 (9.7)	21 (15.9)	210 (10.1)
	4 meals or more	43 (2.2)	2 (1.5)	45 (2.2)
While deployed, on an average day, how many cups, cans, or bottles of soda did you drink?	None	638 (32.8)	52 (39.7)	690 (33.2)
	1-2 cans, cups, or bottles	886 (45.6)	57 (43.5)	943 (45.4)
	3-4 cans, cups, or bottles	252 (13.0)	12 (9.2)	264 (12.7)
	5 or more cans, cups, or bottles	169 (8.7)	10 (7.6)	179 (8.6)
While deployed, on an average day, how many ounces of water did you drink?	None	30 (1.5)	1 (0.8)	31 (1.5)
	32 ounces or 4 cups or less	310 (15.9)	30 (22.7)	340 (16.4)
	64 ounces or 8 cups	799 (41.1)	57 (43.2)	856 (41.2)
	128 ounces or 16 cups	353 (18.1)	24 (18.2)	377 (18.2)
	More than 1 gallon	453 (23.3)	20 (15.2)	473 (22.8)
	None	753 (38.7)	64 (48.5)	817 (39.4)

Variable	Level of Variable	Men	Women	Total
		N (%)	N (%)	N (%)
While deployed, on an average day, how many energy drinks did you drink?	1-2 cans	801 (41.2)	43 (32.6)	844 (40.7)
	3 cans or more	390 (20.1)	25 (18.9)	415 (20.0)
Did you drink sports drinks while deployed?	Yes	1,649 (84.3)	102 (77.3)	1,751 (83.9)
	No	307 (15.7)	30 (22.7)	337 (16.1)
While deployed, on an average day, how many sports drinks did you drink?	None	307 (15.7)	30 (22.7)	337 (16.1)
	1-2 cans, cups, or bottles	884 (45.2)	71 (53.8)	955 (45.7)
	3 cans, cups, or bottles, or more	765 (39.1)	31 (23.5)	796 (38.1)
While deployed, on an average day, how many cups of dark green vegetables did you eat?	None	448 (22.9)	13 (9.8)	461 (22.1)
	1 or less cup raw or 1/2 cup cooked	660 (33.8)	55 (41.7)	715 (34.3)
	2 cups raw or 1 cup cooked	584 (29.9)	43 (32.6)	627 (30.1)
	3 cups raw or 1.5 cups cooked or more	262 (13.4)	21 (15.9)	283 (13.6)
While deployed, did you make an effort to always eat/drink a meal within 30 minutes after PT or workout?	Always	813 (41.6)	30 (22.7)	843 (40.5)
	Sometimes	812 (41.6)	59 (44.7)	871 (41.8)
	Never	327 (16.8)	43 (32.6)	370 (17.8)

Appendix F

Physical Training and Injury Post-Deployment Survey

PRIVACY ACT STATEMENT – HEALTH CARE RECORDS, FITNESS TEST SCORES, AND QUESTIONNAIRE

1. AUTHORITY FOR COLLECTION OF INFORMATION INCLUDING SOCIAL SECURITY NUMBER

Public Law 104-191, Section 1178; Executive Order 9397; Section 8103, Title 5, United States Code

2. PRINCIPLE PURPOSES FOR WHICH INFORMATION IS INTENDED TO BE USED

This form provides you the advice required by the Privacy Act of 1974. The information obtained from this project will be used to determine if cross-training types of physical fitness programs have an effect on injuries, limited duty days, and physical fitness. We will need to obtain your social security number in order to link your questionnaire information with other data such as Army Physical Fitness Test (APFT) scores and information on injuries you may have had in the last year. Using your social security number is the only way we can do this. We will strictly limit access to your social security number by shredding all paper files after scanning, having all computer files password protected, and removing SSNs and name after data are linked. The questionnaire is to obtain information on current physical fitness activities, tobacco use, dietary habits and previous or current injuries.

3. ROUTINE USES

The primary use of this information is to improve the health and fitness of 4 ID Soldiers. The data obtained from the questionnaires will be included in a database that contains the same information for all Soldiers participating in this project. The only personnel having access to this information will be the public health officials who will analyze the information. You will not be personally identified in any report or any output of any type since the interest is in the health and fitness of the Unit and not the health and fitness of any single individual.

The database that is established will identify current level of fitness by unit, current unit injury trends, and factors that lower Soldiers' risk of injury and enhance fitness. The database will be used to make recommendations to decision makers regarding programs and policies that might improve fitness and reduce the incidence of injury.

4. WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION

Disclosure of the requested information is voluntary. If you do not disclose the information you will not be included in the database and you will not participate in the project designed to reduce injuries and improve the health and fitness of Soldiers in your Unit.

SIGNATURE OF PARTICIPANT

DATE

4th Infantry 2BCT Physical Training and Injury Post-Deployment Survey

Background Details

Directions: Please carefully read the directions for each section. Be sure to darken bubbles completely. Do not use checks or “x’s” or special characters to fill in the bubbles. Please be sure to write legibly where a written answer is required.

Last Name

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A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L	L	L
M	M	M	M	M	M	M	M	M	M
N	N	N	N	N	N	N	N	N	N
O	O	O	O	O	O	O	O	O	O
P	P	P	P	P	P	P	P	P	P
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
R	R	R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U
V	V	V	V	V	V	V	V	V	V
W	W	W	W	W	W	W	W	W	W
X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

First Name

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A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L	L	L
M	M	M	M	M	M	M	M	M	M
N	N	N	N	N	N	N	N	N	N
O	O	O	O	O	O	O	O	O	O
P	P	P	P	P	P	P	P	P	P
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
R	R	R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U
V	V	V	V	V	V	V	V	V	V
W	W	W	W	W	W	W	W	W	W
X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

Background Details

Example: If you are 5 feet 7 inches tall:

5

0

7

SSN: (no dashes)

--	--	--	--	--	--	--	--	--

0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9

HEIGHT:

--	--	--

Feet

Inches

(X)	(0)	(0)
(X)	(1)	(1)
(X)	(X)	(2)
(X)	(X)	(3)
(4)	(X)	(4)
(5)	(X)	(5)
(6)	(X)	(6)
(7)	(X)	(7)
(X)	(X)	(8)
(X)	(X)	(9)

WEIGHT: (lbs)

--	--	--

(0)	(0)	(0)
(1)	(1)	(1)
(2)	(2)	(2)
(3)	(3)	(3)
(X)	(4)	(4)
(X)	(5)	(5)
(X)	(6)	(6)
(X)	(7)	(7)
(X)	(8)	(8)
(X)	(9)	(9)

DATE OF BIRTH: YYYY/MM/DD

1	9			/			/		
---	---	--	--	---	--	--	---	--	--

(X)	(X)	(X)	(0)	(0)	(0)	(0)	(0)
(1)	(X)	(X)	(1)	(1)	(1)	(1)	(1)
(X)	(X)	(X)	(2)	(X)	(2)	(2)	(2)
(X)	(X)	(X)	(3)	(X)	(3)	(3)	(3)
(X)	(X)	(X)	(4)	(X)	(4)	(X)	(4)
(X)	(X)	(5)	(5)	(X)	(5)	(X)	(5)
(X)	(X)	(6)	(6)	(X)	(6)	(X)	(6)
(X)	(X)	(7)	(7)	(X)	(7)	(X)	(7)
(X)	(X)	(8)	(8)	(X)	(8)	(X)	(8)
(X)	(9)	(9)	(9)	(X)	(9)	(X)	(9)

Background Details

1. Today's date:

Month	☐ Jan	☐ Feb	☐ Mar	☐ Apr	☐ May	☐ Jun	☐ Jul	☐ Aug	☐ Sep	☐ Oct	☐ Nov	☐ Dec	
Day	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	☐ 10	☐ 11	☐ 12	
	☐ 13	☐ 14	☐ 15	☐ 16	☐ 17	☐ 18	☐ 19	☐ 20	☐ 21	☐ 22	☐ 23	☐ 24	
	☐ 25	☐ 26	☐ 27	☐ 28	☐ 29	☐ 30	☐ 31						

2. Are you...

- ☐ ₀ Male
☐ ₁ Female

3. What is your component?

- ☐ ₁ Regular Army
☐ ₂ Army Reserve
☐ ₃ National Guard

4. When did you in-process with the 2 BDE 4 ID?

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Month	☐ Jan	☐ Feb	☐ Mar	☐ Apr	☐ May	☐ Jun	☐ Jul	☐ Aug	☐ Sep	☐ Oct	☐ Nov	☐ Dec
-------	---------------------------	---------------------------	---------------------------	---------------------------	---------------------------	---------------------------	---------------------------	---------------------------	---------------------------	---------------------------	---------------------------	---------------------------

5. What is your current Battalion?

- | | |
|--|---|
| ☐ ₁ 3-16 FA
☐ ₂ 1-10 CAV
☐ ₃ 1-67 AR
☐ ₄ 2-8 IN
☐ ₅ 204 BSB | ☐ ₆ 2-4 STB
☐ ₇ HHC
☐ ₈ REPL Company
☐ ₉ REAR D Cadre
☐ ₁₀ Other _____ |
|--|---|

6. What is your company, troop, battery or FSC?

- | | |
|--|--|
| ☐ ₁ A
☐ ₂ B
☐ ₃ C
☐ ₄ D
☐ ₅ E
☐ ₆ F
☐ ₇ G | ☐ ₈ HHC or HHB or HHT
☐ ₉ REPL
☐ ₁₀ REAR D
☐ ₁₁ Other _____ |
|--|--|

7. What is your Military Occupational Specialty (MOS)?

--	--	--

8. What was your duty MOS while deployed?

--	--	--

9. What is your rank?

- | | | | | | | | |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| ☐ 1 E1 | ☐ 2 E2 | ☐ 3 E3 | ☐ 4 E4 | ☐ 5 E5 | ☐ 6 E6 | ☐ 7 E7 | ☐ 8 E8 |
| ☐ 9 E9 | ☐ 10 O1 | ☐ 11 O2 | ☐ 12 O3 | ☐ 13 O4 | ☐ 14 O5 | ☐ 15 O6 | ☐ 16 W1 |
| ☐ 17 W2 | ☐ 18 W3 | ☐ 19 W4 | ☐ 20 W5 | | | | |

10. For your most recent deployment, when did you **deploy**?

Year ☐ 2011

Month	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

11. For your most recent deployment, when did you **return**?

Year ☐ 2011 ☐ 2012

Month	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Foot Patrolling

12. On average while deployed, how many days per week were you involved in operations requiring foot patrolling?

- | | |
|--|-----------------------------------|
| ☐ 0 None | ☐ 5 4 days/wk |
| ☐ 1 Less than 1 day/wk | ☐ 6 5 days/wk |
| ☐ 2 1day/wk | ☐ 7 6 days/wk |
| ☐ 3 2 days/wk | ☐ 8 7 days/wk |
| ☐ 4 3 days/wk | |

13. On average while deployed, what distance did you walk per day on each foot patrol?

- | | |
|---|---|
| ☐ 0 None, no foot patrolling duties | ☐ 6 5 miles |
| ☐ 1 < 1 mile | ☐ 7 6 miles |
| ☐ 2 1 mile | ☐ 8 7 miles |
| ☐ 3 2 miles | ☐ 9 8 miles |
| ☐ 4 3 miles | ☐ 10 9 miles |
| ☐ 5 4 miles | ☐ 11 10 miles or more |

Injuries While Deployed

The next questions are about injuries while you were deployed. People can be injured accidentally or on purpose. Injuries can occur in two ways:

- 1) When strong sudden forces are applied to the body – these would include things like falling from a ladder, an automobile crash, or being hit by a bullet fired from a weapon.
- 2) When smaller forces are applied to the body over and over again (repeatedly) – these would include activities like excessive exercise or running long distances, repetitive lifting/pulling/pushing objects, or repeatedly pitching a softball.

14. With the above definitions in mind, have you had an injury during your most recent deployment. If so, how many different times did you have an injury where any part of your body was hurt, for example, joint sprains, muscle or tendon strains, concussion, cut finger, broken bone, or shin splints?

- ☐ I did NOT have any injuries during my most recent deployment. *Skip to page 10, question #15*
- ☐ I was injured during my most recent deployment.

Please enter the number of injuries you had during your **most recent deployment**:

--	--

- | | |
|-------------------------|-------------------------|
| ☐ 0 | ☐ 0 |
| ☐ 1 | ☐ 1 |
| ☐ 2 | ☐ 2 |
| ☐ 3 | ☐ 3 |
| ☐ 4 | ☐ 4 |
| ☐ 5 | ☐ 5 |
| ☐ 6 | ☐ 6 |
| ☐ 7 | ☐ 7 |
| ☐ 8 | ☐ 8 |
| ☐ 9 | ☐ 9 |

If you reported having an injury, please continue to the next page.
There are 3 injury pages to record up to 3 injuries (one injury per page). Please record your most recent injury first.

Injury #1 (The most recent injury you encountered during your most recent deployment)

Date of Injury

☐ 2011

☐ 2012

Month

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Body Area #1 (Mark One)

- | | | | | |
|-----------------------------------|--------------------------------|------------------------------------|-------------------------------------|---|
| ☐ 1 Abdomen | ☐ 6 Elbow | ☐ 11 Hand | ☐ 16 Lower Back | ☐ 21 Upper Arm |
| ☐ 2 Ankle | ☐ 7 Eye | ☐ 12 Head | ☐ 17 Neck | ☐ 22 Upper Back |
| ☐ 3 Calf/Shin | ☐ 8 Face | ☐ 13 Hip | ☐ 18 Shoulders | ☐ 23 Wrist |
| ☐ 4 Chest | ☐ 9 Finger | ☐ 14 Knee | ☐ 19 Thigh | ☐ 24 Other (list) _____ |
| ☐ 5 Ear | ☐ 10 Foot | ☐ 15 Lower Arm | ☐ 20 Toe | |

Type of Injury #1 (Mark One)

- | | | | | |
|----------------------------------|--|---------------------------------------|--|---|
| ☐ 1 Abrasion | ☐ 5 Cold Injury | ☐ 9 Fracture | ☐ 13 Sprain (Joint) | ☐ 17 Other (list) _____ |
| ☐ 2 Blister | ☐ 6 Cut/laceration | ☐ 10 Heat Injury | ☐ 14 Strain (muscle) | |
| ☐ 3 Bruise | ☐ 7 Dislocation | ☐ 11 Nerve Injury | ☐ 15 Stress Fracture | |
| ☐ 4 Bursitis | ☐ 8 Fasciitis | ☐ 12 Pain | ☐ 16 Tendonitis | |

Activity of Injury #1 (Mark One)

- | | | | |
|---|--|--|--|
| ☐ 1 Physical Training (Running) | ☐ 4 Sports/Recreation (list) _____ | ☐ 7 Riding or driving in a motorized vehicle | ☐ 10 Rough-housing or Fighting |
| ☐ 2 Physical Training (Not Running) | ☐ 5 Stepping/Climbing | ☐ 8 Repairing or maintaining equipment | ☐ 11 Gunshot, missile or blast |
| ☐ 3 Other exercise (list) _____ | ☐ 6 Walking, Hiking, Marching | ☐ 9 Lifting or moving heavy objects | ☐ 12 Other (list) _____ |

Cause of Injury #1 (Mark One)

- | | | | |
|--|--|---|---|
| ☐ 1 Fall, jump, trip, or slip | ☐ 3 Cut by a sharp tool, object or instrument | ☐ 5 Overexertion, strenuous or repetitive movements | ☐ 7 Fire, hot substance or object, or steam |
| ☐ 2 Struck against or by an object or person | ☐ 4 Environmental factors such as heat or cold | ☐ 6 Direct contact with enemy | ☐ 8 Other (list) _____ |

☐

This is a new injury that occurred for the first time during the deployment

☐

This is a re-injury of an injury I had before deploying

Have you been seen by a medical professional for this injury?

☐ 1 Yes

☐ 0 No

Which medical professionals?

☐ 1 Medic

☐ 2 P.A.

☐ 3 P.T.

☐ 4 O.T.

☐ 5 Physician

☐ 6 Nurse

☐ 7 Not Sure

Total Days of Limited Duty or Profile for this injury

--	--	--

☐ 0 ☐ 0 ☐ 0

☐ 1 ☐ 1 ☐ 1

☐ 2 ☐ 2 ☐ 2

☐ 3 ☐ 3 ☐ 3

☐ 4 ☐ 4 ☐ 4

☐ 5 ☐ 5 ☐ 5

☐ 6 ☐ 6 ☐ 6

☐ 7 ☐ 7 ☐ 7

☐ 8 ☐ 8 ☐ 8

☐ 9 ☐ 9 ☐ 9

How long did you have this condition?

☐ 1 Less than 1 week

☐ 2 1-3 weeks

☐ 3 1-3 months

☐ 4 4-6 months

☐ 5 > 6 months

Did this injury occur while:

☐ 1 On Duty

☐ 2 Off Duty

☐ 3 On R&R/Leave

Injury #2 (Injury you encountered during your most recent deployment)

Date of Injury



2011



2012

Month



Jan



Feb



Mar



Apr



May



Jun



Jul



Aug



Sep



Oct



Nov



Dec

Body Area #2 (Mark One)

- | | | | | |
|-------------|----------|-------------|--------------|----------------------|
| ① Abdomen | ⑥ Elbow | ⑪ Hand | ⑯ Lower Back | ⑳ Upper Arm |
| ② Ankle | ⑦ Eye | ⑫ Head | ⑰ Neck | ㉒ Upper Back |
| ③ Calf/Shin | ⑧ Face | ⑬ Hip | ⑱ Shoulders | ㉓ Wrist |
| ④ Chest | ⑨ Finger | ⑭ Knee | ⑲ Thigh | ㉔ Other (list) _____ |
| ⑤ Ear | ⑩ Foot | ⑮ Lower Arm | ㉕ Toe | |

Type of Injury #2 (Mark One)

- | | | | | |
|------------|------------------|----------------|-------------------|----------------------|
| ① Abrasion | ⑤ Cold Injury | ⑨ Fracture | ⑬ Sprain (Joint) | ⑰ Other (list) _____ |
| ② Blister | ⑥ Cut/laceration | ⑩ Heat Injury | ⑭ Strain (muscle) | |
| ③ Bruise | ⑦ Dislocation | ⑪ Nerve Injury | ⑮ Stress Fracture | |
| ④ Bursitis | ⑧ Fasciitis | ⑫ Pain | ⑯ Tendonitis | |

Activity of Injury #2 (Mark One)

- | | | | |
|-----------------------------------|----------------------------------|--|-----------------------------|
| ① Physical Training (Running) | ④ Sports/Recreation (list) _____ | ⑦ Riding or driving in a motorized vehicle | ⑩ Rough-housing or Fighting |
| ② Physical Training (Not Running) | ⑤ Stepping/Climbing | ⑧ Repairing or maintaining equipment | ⑪ Gunshot, missile or blast |
| ③ Other exercise (list) _____ | ⑥ Walking, Hiking, Marching | ⑨ Lifting or moving heavy objects | ⑫ Other (list) _____ |

Cause of Injury #2 (Mark One)

- | | | | |
|--|--|---|---|
| ① Fall, jump, trip, or slip | ③ Cut by a sharp tool, object or instrument | ⑤ Overexertion, strenuous or repetitive movements | ⑦ Fire, hot substance or object, or steam |
| ② Struck against or by an object or person | ④ Environmental factors such as heat or cold | ⑥ Direct contact with enemy | ⑧ Other _____ |



This is a new injury that occurred for the first time during the deployment



This is a re-injury of an injury I had before deploying

Have you been seen by a medical professional for this injury?

① Yes

② No

Which medical professionals?

- ① Medic
- ② P.A.
- ③ P.T.
- ④ O.T.
- ⑤ Physician
- ⑥ Nurse
- ⑦ Not Sure

Total Days of Limited Duty or Profile for this injury

--	--	--

- | | | |
|---|---|---|
| ① | ② | ③ |
| ④ | ⑤ | ⑥ |
| ⑦ | ⑧ | ⑨ |
| ⑩ | ⑪ | ⑫ |
| ⑬ | ⑭ | ⑮ |
| ⑯ | ⑰ | ⑱ |
| ⑲ | ⑳ | ㉑ |
| ㉒ | ㉓ | ㉔ |
| ㉕ | ㉖ | ㉗ |
| ㉘ | ㉙ | ㉚ |
| ㉛ | ㉜ | ㉝ |
| ㉞ | ㉟ | ㊱ |
| ㊲ | ㊳ | ㊴ |
| ㊵ | ㊶ | ㊷ |
| ㊸ | ㊹ | ㊺ |
| ㊻ | ㊼ | ㊽ |
| ㊾ | ㊿ | |

How long did you have this condition?

- ① Less than 1 week
- ② 1-3 weeks
- ③ 1-3 months
- ④ 4-6 months
- ⑤ > 6 months

Did this injury occur while:

- ① On Duty
- ② Off Duty
- ③ On R&R/Leave

Injury #3 (Injury you encountered during your most recent deployment)

Date of Injury



2011



2012

Month



Jan



Feb



Mar



Apr



May



Jun



Jul



Aug



Sep



Oct



Nov



Dec

Body Area #3 (Mark One)

- | | | | | |
|-------------|----------|-------------|--------------|----------------------|
| ① Abdomen | ⑥ Elbow | ⑪ Hand | ⑯ Lower Back | ⑳ Upper Arm |
| ② Ankle | ⑦ Eye | ⑫ Head | ⑰ Neck | ㉑ Upper Back |
| ③ Calf/Shin | ⑧ Face | ⑬ Hip | ⑱ Shoulders | ㉒ Wrist |
| ④ Chest | ⑨ Finger | ⑭ Knee | ⑲ Thigh | ㉓ Other (list) _____ |
| ⑤ Ear | ⑩ Foot | ⑮ Lower Arm | ㉔ Toe | |

Type of Injury #3 (Mark One)

- | | | | | |
|------------|------------------|----------------|-------------------|----------------------|
| ① Abrasion | ⑤ Cold Injury | ⑨ Fracture | ⑬ Sprain (Joint) | ⑰ Other (list) _____ |
| ② Blister | ⑥ Cut/laceration | ⑩ Heat Injury | ⑭ Strain (muscle) | |
| ③ Bruise | ⑦ Dislocation | ⑪ Nerve Injury | ⑮ Stress Fracture | |
| ④ Bursitis | ⑧ Fasciitis | ⑫ Pain | ⑯ Tendonitis | |

Activity of Injury #3 (Mark One)

- | | | | |
|-----------------------------------|----------------------------------|--|-----------------------------|
| ① Physical Training (Running) | ④ Sports/Recreation (list) _____ | ⑦ Riding or driving in a motorized vehicle | ⑩ Rough-housing or Fighting |
| ② Physical Training (Not Running) | ⑤ Stepping/Climbing | ⑧ Repairing or maintaining equipment | ⑪ Gunshot, missile or blast |
| ③ Other exercise (list) _____ | ⑥ Walking, Hiking, Marching | ⑨ Lifting or moving heavy objects | ⑫ Other (list) _____ |

Cause of Injury #3 (Mark One)

- | | | | |
|---|--|---|---|
| ① Fall, jump, trip, or slip | ③ Cut by a sharp tool, object or instrument | ⑤ Overexertion, strenuous or repetitive movements | ⑦ Fire, hot substance or object, or steam |
| ② Struck against or struck by an object or person | ④ Environmental factors such as heat or cold | ⑥ Direct contact with enemy | ⑧ Other _____ |



This is a new injury that occurred for the first time during the deployment



This is a re-injury of an injury I had before deploying

Have you been seen by a medical professional for this injury?

① Yes

② No

Total Days of Limited Duty or Profile for this injury

--	--	--

③

④

⑤

⑥

⑦

⑧

⑨

⑩

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How long did you have this condition?

① Less than 1 week

② 1-3 weeks

③ 1-3 months

④ 4-6 months

⑤ > 6 months

Did this injury occur while:

① On Duty

② Off Duty

③ On R&R/Leave

Which medical professionals?

① Medic

② P.A.

③ P.T.

④ O.T.

⑤ Physician

⑥ Nurse

⑦ Not Sure

Deployed Unit Physical Fitness Training (PT)

The following questions will ask about unit physical fitness training while you were DEPLOYED. Unit physical fitness training is defined as: exercising (i.e., road marching, running, calisthenics, or strength training) with a group of soldiers, such as a squad, platoon, or company.

15. Did you participate in unit PT while deployed?

- ☐ ₁ Yes
- ☐ ₀ No, but unit PT was conducted in my group **(skip to question #28)**
- ☐ ₂ No unit PT was conducted **(skip to question #28)**

16. On average, how often do you participate in unit PT each week while deployed?

- | | |
|---|---|
| ☐ ₁ 1 time per week | ☐ ₅ 5 times per week |
| ☐ ₂ 2 times per week | ☐ ₆ 6 times per week |
| ☐ ₃ 3 times per week | ☐ ₇ 7 times per week |
| ☐ ₄ 4 times per week | ☐ ₈ more than 7 times per week |

17. Was your unit able to continue with the Iron Horse Performance Optimization Exercise Program (IHPO) or did your unit perform traditional Army PT while deployed (calisthenics, running, push-ups, sit-ups)

- ☐ ₁ Continued IHPO exercise program while deployed
- ☐ ₂ Continued a modified type IHPO exercise program while deployed
- ☐ ₃ Performed Army traditional PT while deployed
- ☐ ₄ Our unit performed another type of exercise program. Please List _____
- ☐ ₅ Not sure

18. While deployed, did your unit perform cross-training type exercise programs? If so, which one **(select all that apply): Cross-training is defined as a program that involves a variety of exercises, such as strength training, agility drills, sprints, plyometrics, etc.**

- ☐ ₀ Did not perform cross-training type exercise programs
- ☐ ₁ Basic cross-training types of exercises
- ☐ ₂ TRX
- ☐ ₃ P90X
- ☐ ₄ Crossfit
- ☐ ₅ Iron Horse Performance Optimization (IHPO)
- ☐ ₆ Insanity
- ☐ ₇ Other (please name) _____

19. If your unit performed cross-training types of exercise programs while deployed, approximately how many times per week?

- ☐ ₀ Did not perform cross-training type exercise programs while deployed
- ☐ ₁ 1-2 times per week
- ☐ ₂ 3-4 times per week
- ☐ ₃ 5-6 times per week
- ☐ ₄ More than 6 times per week

20. While deployed, on average, how many times per week did your unit perform distance running (i.e., running continuously for 1 mile or greater)?

- | | |
|--|---|
| ☐ ₀ Did not perform distance running while deployed | ☐ ₅ 4 times per week |
| ☐ ₁ < 1 time per week | ☐ ₆ 5 times per week |
| ☐ ₂ 1 time per week | ☐ ₇ 6 times per week |
| ☐ ₃ 2 times per week | ☐ ₈ 7 times per week |
| ☐ ₄ 3 times per week | ☐ ₉ > 7 times per week |

21. While deployed, on average, how far did you run when your unit performed distance running?

- | | |
|--|--|
| ☐ ₀ I didn't perform distance runs while deployed | ☐ ₇ 6 miles |
| ☐ ₁ < 1 mile | ☐ ₈ 7 miles |
| ☐ ₂ 1 mile | ☐ ₉ 8 miles |
| ☐ ₃ 2 miles | ☐ ₁₀ 9 miles |
| ☐ ₄ 3 miles | ☐ ₁₁ 10 miles |
| ☐ ₅ 4 miles | ☐ ₁₂ > 10 miles |
| ☐ ₆ 5 miles | |

22. While deployed, on average, how many times per week did your unit perform sprint or interval-style running? **Sprints are short bursts of speed that cannot be sustained for more than a few minutes. Intervals are short periods of high speed running mixed with periods of jogging or walking.**

- ☐ ₀ Did not perform sprint or interval running while deployed
- ☐ ₁ < 1 time per week
- ☐ ₂ 1-2 times per week
- ☐ ₃ 3-4 times per week
- ☐ ₄ 5-6 times per week
- ☐ ₅ More than 6 times per week

23. While deployed, on average, how many times per week did your unit perform calisthenics (i.e., jumping jacks, windmills, mountain climbers, etc.)?

- ☐ ₀ Did not perform calisthenics while deployed
- ☐ ₁ < 1 time per week
- ☐ ₂ 1-2 times per week
- ☐ ₃ 3-4 times per week
- ☐ ₄ 5-6 times per week
- ☐ ₅ More than 6 times per week

24. While deployed, on average, how many times per week did your unit perform resistance training (i.e., weight lifting using free weights, dumbbells, kettlebells, hammer-strength machines, etc.)?

- ☐ ₀ Did not perform resistance training while deployed
- ☐ ₁ < 1 time per week
- ☐ ₂ 1-2 times per week
- ☐ ₃ 3-4 times per week
- ☐ ₄ 5-6 times per week
- ☐ ₅ More than 6 times per week

25. What type of equipment did you use for resistance training while deployed? **(select all that apply):**

- ☐ ₀ Our unit did not perform resistance training while deployed
- ☐ ₁ Kettlebells
- ☐ ₂ Tires to Flip
- ☐ ₃ Sled Dragging
- ☐ ₄ Bands and/or Chains
- ☐ ₅ Weight machines (ex. Smith machines, selectorized machines, cable machines)
- ☐ ₆ Rope Swinging
- ☐ ₇ Free Weights
- ☐ ₈ Medicine Balls
- ☐ ₉ Stability Balls/Boards
- ☐ ₁₀ Other _____

26. While deployed, on average, how many times per week did your unit perform agility drills (i.e., drills requiring lateral movements, typically using cones or ladders, obstacle course, etc.)?

- ☐ ₀ Our unit did not perform agility drills while deployed
- ☐ ₁ < 1 time per week
- ☐ ₂ 1-2 times per week
- ☐ ₃ 3-4 times per week
- ☐ ₄ 5-6 times per week
- ☐ ₅ More than 6 times per week

27. Exercise Equipment: Indicate the exercise equipment that was available to you while deployed and whether or not you used this equipment.

	Not Available	Available	<u>IF AVAILABLE:</u>	
			Used	Not Used
Treadmills	(1)	(2)	(1)	(2)
Stationary Bicycles	(1)	(2)	(1)	(2)
Stairmasters	(1)	(2)	(1)	(2)
Free Weights	(1)	(2)	(1)	(2)
Universal Weight Training Equipment	(1)	(2)	(1)	(2)
Nautilus	(1)	(2)	(1)	(2)
Pull-Up Bar	(1)	(2)	(1)	(2)
Swimming Facility	(1)	(2)	(1)	(2)
Basketball Court	(1)	(2)	(1)	(2)
Tennis Court	(1)	(2)	(1)	(2)
Racquetball/Squash Court	(1)	(2)	(1)	(2)
Baseball/Softball Field	(1)	(2)	(1)	(2)
Soccer Field	(1)	(2)	(1)	(2)
Track	(1)	(2)	(1)	(2)
Running Area	(1)	(2)	(1)	(2)
Outdoor Bicycles	(1)	(2)	(1)	(2)
Other (List) _____	(1)	(2)	(1)	(2)
Other (List) _____	(1)	(2)	(1)	(2)

Deployed Personal Physical Fitness Training (PT)

The following questions will ask about your personal physical fitness training (PT). Personal PT is any physical fitness training *not* conducted with your unit. Please answer these questions with regard to your *most recent deployment* personal PT program.

28. Did you perform PT on your own time, while deployed?

- ☐ ₁ Yes
☐ ₀ No

29. While deployed, on average, how many times per week did you perform distance running for personal PT (i.e., running continuously for 1 mile or more)?

- | | |
|---|---|
| ☐ ₀ Did not perform distance running on my own, while deployed | ☐ ₅ 4 times per week |
| ☐ ₁ < 1 time per week | ☐ ₆ 5 times per week |
| ☐ ₂ 1 time per week | ☐ ₇ 6 times per week |
| ☐ ₃ 2 times per week | ☐ ₈ 7 times per week |
| ☐ ₄ 3 times per week | ☐ ₉ > 7 times per week |

30. While deployed, on average, how far did you run when you performed distance runs for personal PT?

- | | |
|---|--|
| ☐ ₀ I didn't perform distance runs on my own | ☐ ₇ 6 miles |
| ☐ ₁ < 1 mile | ☐ ₈ 7 miles |
| ☐ ₂ 1 mile | ☐ ₉ 8 miles |
| ☐ ₃ 2 miles | ☐ ₁₀ 9 miles |
| ☐ ₄ 3 miles | ☐ ₁₁ 10 miles |
| ☐ ₅ 4 miles | ☐ ₁₂ > 10 miles |
| ☐ ₆ 5 miles | |

31. While deployed, how many days a week did you perform aerobic endurance that did NOT involve running (ex. elliptical machine, rowing machine, cycling, stair stepper)

- ☐ ₀ I didn't perform this type of aerobic endurance on my own
- ☐ ₁ < 1 time per week
- ☐ ₂ 1-2 times per week
- ☐ ₃ 3-4 times per week
- ☐ ₄ 5-6 times per week
- ☐ ₅ More than 6 times per week

32. While deployed, on days when you performed aerobic endurance that did NOT involve running, how long did you exercise each day, on average?

- ☐ ₀ I didn't perform this type of aerobic endurance on my own
- ☐ ₁ 15 minutes or less
- ☐ ₂ 15-30 minutes
- ☐ ₃ 30-45 minutes
- ☐ ₄ 45-60 minutes
- ☐ ₅ 60-90 minutes
- ☐ ₆ > 90 minutes

33. While deployed, on average, how many times per week did you perform resistance training for personal PT? (i.e., weight lifting using free weights, dumbbells, kettlebells, hammer-strength machines, etc)?

- ☐ ₀ I didn't perform resistance training on my own
- ☐ ₁ < 1 time per week
- ☐ ₂ 1-2 times per week
- ☐ ₃ 3-4 times per week
- ☐ ₄ 5-6 times per week
- ☐ ₅ More than 6 times per week

34. While deployed, on average, how many times per week did you perform sprint or interval-style running for personal PT?

Sprints are defined as short bursts of speed that cannot be sustained for more than a few minutes. Intervals are short periods of high speed running mixed with periods of jogging or walking.

- ☐ ₀ I didn't perform sprint or interval style running on my own
- ☐ ₁ < 1 time per week
- ☐ ₂ 1-2 times per week
- ☐ ₃ 3-4 times per week
- ☐ ₄ 5-6 times per week
- ☐ ₅ More than 6 times per week

35. What program is your personal physical training program based upon? **(select all that apply):**

- ☐ ₀ I didn't have a personal physical training program
- ☐ ₁ I didn't have a specific personal physical training program
- ☐ ₂ Traditional Army PT (calisthenics, running, push-ups, sit-ups)
- ☐ ₃ Cross-training types of exercises
- ☐ ₄ TRX
- ☐ ₅ P90X
- ☐ ₆ Crossfit
- ☐ ₇ Iron Horse Performance Optimization Program
- ☐ ₈ Insanity
- ☐ ₉ Other (please name) _____

36. How would you rate your ability in each of the following categories, compared to others of your age and gender:

	Far Less Than Average ₁	Less Than Average ₂	Average ₃	Greater Than Average ₄	Far Greater Than Average ₅
Endurance	☐	☐	☐	☐	☐
Sprint Speed	☐	☐	☐	☐	☐
Strength	☐	☐	☐	☐	☐
Flexibility	☐	☐	☐	☐	☐
Core Strength	☐	☐	☐	☐	☐
Balance	☐	☐	☐	☐	☐
Agility	☐	☐	☐	☐	☐
Body Fat*	☐	☐	☐	☐	☐

* For Body Fat "Far Less Than Average" means you have far less body fat than others compared to your age and gender.

37. What was the date (year/month) of your most recent Army Physical Fitness Test (APFT)?

Year	☐ 2011	☐ 2012										
Month	☐ Jan	☐ Feb	☐ Mar	☐ Apr	☐ May	☐ Jun	☐ Jul	☐ Aug	☐ Sep	☐ Oct	☐ Nov	☐ Dec

38. What were the raw scores on your most recent Army Physical Fitness Test (APFT)?

a. Push-Ups |_|_|_|_| repetitions b. Sit-Ups |_|_|_|_| repetitions
c. Run |_|_|_| min |_|_|_| sec or Walk |_|_|_| min |_|_|_| sec

38b. Were you injured during the APFT Test? ① Yes ② No

38c. If yes, which event? ① Sit-ups ② Push-ups ③ Run ④ Walk

Deployed Sports Activities

39. How many days per week on average, did you participate in sports activities, while you were deployed?

- ☐ 0 I did not participate in sports activities
- ☐ 1 Less than 1 day/week
- ☐ 2 1/day/week
- ☐ 3 2/days/week
- ☐ 4 3/days/week
- ☐ 5 4/days/week
- ☐ 6 5 or more days/week

40. On the days you participated in sports activities while you were deployed, how long did you participate each day, on average?

- ☐ 0 I did not participate in sports activities
- ☐ 1 30 minutes or less
- ☐ 2 45 minutes or less
- ☐ 3 1 hour
- ☐ 4 1.5 hours
- ☐ 5 2 hours
- ☐ 6 2.5 hours
- ☐ 7 3 hours or more

41. What sports did you participate in? **(select all that apply)**

- ☐ ₀ I did not participate in sports activities
- ☐ ₁ Basketball
- ☐ ₂ Boxing
- ☐ ₃ Football
- ☐ ₄ Martial Arts
- ☐ ₅ Soccer
- ☐ ₆ Softball
- ☐ ₇ Other (list) _____

Tobacco Use

Please answer these questions with regard to your past and current tobacco use.

42. Have you smoked more than 100 cigarettes in your life? (100 cigarettes = 5 packs)

- ☐ ₁ Yes
- ☐ ₀ No

43. About how old were you when you smoked a whole cigarette for the first time?

- ☐ ₀ I have never smoked a whole cigarette
- ☐ ₁ I have smoked a whole cigarette |__|__| Age when first cigarette smoked

44. During the past 30 days, on how many days did you smoke cigarettes?

- ☐ ₀ I have not smoked in the last 30 days
- ☐ ₁ I have smoked in the last 30 days |__|__| Number of days smoked

45. During the past 30 days, on the days you smoked, how many cigarettes did you smoke per day on average?

- ☐ ₀ I have not smoked in the last 30 days
- ☐ ₁ I have smoked in the last 30 days |__|__| Number of cigarettes smoked per day

46. If you used to smoke cigarettes and quit, how many months or years ago did you quit?

- ☐ ₀ I have never smoked or I am currently smoking
- ☐ ₁ I have quit smoking

|__|__| Months OR |__|__| Years quit

47. If you are currently smoking, how many years have you been smoking?

- ☐ ₀ I have never smoked or I am currently not smoking
☐ ₁ I am currently smoking

|_|_| Number of years smoked

48. While deployed did you smoke more, the same or less cigarettes per day prior to deployment?

- ☐ ₀ I have never smoked or I am currently not smoking
☐ ₁ I started smoking cigarettes while deployed
☐ ₂ I smoked more cigarettes while deployed (how many more cigs per day) |_|_|_|
☐ ₃ I smoked the same amount of cigarettes
☐ ₄ I smoked less cigarettes while deployed

49. During the past 30 days, on how many days did you use smokeless tobacco (chewing tobacco, snuff, dip, etc)?

- ☐ ₀ I have not used smokeless tobacco in the last 30 days
☐ ₁ I have used smokeless tobacco in the last 30 days

|_|_| Number of days used smokeless

50. During the past 30 days, on the days you used smokeless tobacco, how many cans, pouches or plugs did you use **per day**, on average?

- ☐ ₀ I have not used smokeless tobacco in the last 30 days
☐ ₁ I have used smokeless tobacco in the last 30 days

|_|_| Number of cans **or** |_|_|_| Number of pouches **or** |_|_|_| Number of plugs

51. If you used to use smokeless tobacco and quit, how many months or years ago did you quit?

- ☐ ₀ I have never used smokeless tobacco or I am currently using smokeless tobacco
☐ ₁ I have quit using smokeless tobacco

|_|_| Months OR |_|_|_| Years quit

52. If you are currently using smokeless tobacco, how many years have you been using smokeless tobacco?

- ☐ ₀ I have never used smokeless tobacco or I am not currently using smokeless tobacco
☐ ₁ I am currently using smokeless tobacco

|_|_| Number of years used smokeless

53. While deployed did you use more, the same or less smokeless tobacco per day prior to deployment?

- ☐ ₀ I have never used smokeless tobacco or I am currently not using smokeless tobacco
- ☐ ₁ I started using smokeless tobacco while deployed
- ☐ ₂ I used more smokeless tobacco while deployed
- ☐ ₃ I used the same amount of smokeless tobacco
- ☐ ₄ I used less smokeless tobacco while deployed

Deployment Nutrition

The next questions are about your nutrition and dietary habits. Some of these questions are about meals consumed. Meals are defined as breakfast, lunch, and dinner.

54. While deployed, in general, how healthy is/was your overall diet? Would you say.....

- ☐ ₁ Excellent
- ☐ ₂ Very Good
- ☐ ₃ Good
- ☐ ₄ Fair
- ☐ ₅ Poor

55. While deployed, how many times per week did you eat breakfast?

- ☐ ₁ Never
- ☐ ₂ 1-2 times per week
- ☐ ₃ 3-4 times per week
- ☐ ₄ 5-7 times per week

56. While deployed, what typically was your largest meal during the day?

- ☐ ₁ Breakfast
- ☐ ₂ Lunch
- ☐ ₃ Dinner
- ☐ ₄ All of my meals were typically the same size

57. While deployed, how many meals per week did you eat at the DFAC?

- ☐ ₁ None
- ☐ ₂ 1-3 meals
- ☐ ₃ 4-6 meals
- ☐ ₄ 7-10 meals
- ☐ ₅ more than 10 meals

58. While deployed, did you use the nutrition cards/labels in the DFAC to help guide your decisions about the foods you choose ?

- ☐ ₁ Always
- ☐ ₂ Sometimes
- ☐ ₃ Never
- ☐ ₄ What labels?

59. While deployed, during a typical week, how many meals do you get from fast food restaurants?

- ☐ ₀ None
- ☐ ₁ 1-3 meals
- ☐ ₂ 4-6 meals
- ☐ ₃ 7-10 meals
- ☐ ₄ more than 10 meals

60. While deployed, on an average day, how many cups, cans or bottles of soda do you drink?

- ☐ ₀ None
- ☐ ₁ 1-2 cans, cups or bottles
- ☐ ₂ 3-4 cans, cups or bottles
- ☐ ₃ 5-6 cans, cups or bottles
- ☐ ₄ more than 6 cans, cups or bottles

61. While deployed, on an average day, how many ounces of water do you drink?

- ☐ ₀ None
- ☐ ₁ 16 ounces or 2 cups
- ☐ ₂ 32 ounces or 4 cups
- ☐ ₃ 64 ounces or 8 cups
- ☐ ₄ 128 ounces or 16 cups
- ☐ ₅ more than 1 gallon

62. While deployed, on an average day, how many energy drinks did you drink (the size of an 8.3 ounce RedBull® can)? For larger sized cans, estimate how many cans of RedBull® the can would hold (i.e. larger cans may be as many as 3 RedBulls®)

- ☐ ₀ None
- ☐ ₁ 1-2 cans
- ☐ ₂ 3-4 cans
- ☐ ₃ 5-6 cans
- ☐ ₄ more than 6 cans

63. While deployed, on an average day, how many sports drinks (Gatorade®, Powerade®, etc.) did you drink?

- ☐ 0 None
- ☐ 1 1-2 cans, cups or bottles
- ☐ 2 3-4 cans, cups or bottles
- ☐ 3 5-6 cans, cups or bottles
- ☐ 4 more than 6 cans, cups or bottles

64. While deployed, on an average day, how many cups of dark green vegetables (spinach, romaine lettuce, broccoli) did you eat?

- ☐ 0 None
- ☐ 1 1 or less cup raw or (1/2 cup cooked)
- ☐ 2 2 cups raw or (1 cup cooked)
- ☐ 3 3 cups raw or (1 ½ cups cooked)
- ☐ 4 4 or more cups or (2 or more cups cooked)

65. While deployed, did you make an effort to always eat/drink a meal (or protein/energy bar or protein shake) within 30 minutes after PT or working out?

- ☐ 1 Always
- ☐ 2 Sometimes
- ☐ 3 Never

66. While deployed, how did you define your weight goals?

- ☐ 0 Don't have weight goals
- ☐ 1 Gain weight
- ☐ 2 Maintain weight
- ☐ 3 Lose weight

67. Did you take dietary supplements, while deployed?

(select all that apply):

Dietary supplements are taken by mouth, contain a dietary ingredient and come in many forms such as tablets, liquids, energy bars, powders and capsules

- ☐ 0 Do not take dietary supplements
- ☐ 1 Just started taking dietary supplements during this last deployment
- ☐ 2 Vitamins/Multivitamin (please specify)_____
- ☐ 3 Weight loss supplements (please specify)_____
- ☐ 4 Performance/muscle enhancement supplements (please specify)_____
- ☐ 5 Nutrition enhancement supplements (please specify)_____
- ☐ 6 Other (please specify)_____

68. What reasons did you take dietary supplements?

(select all that apply):

- ☐ ₀ Do not take dietary supplements
- ☐ ₁ Promote general health
- ☐ ₂ Give more energy
- ☐ ₃ Greater muscle strength
- ☐ ₄ Performance enhancer
- ☐ ₅ Weight loss
- ☐ ₆ Increased endurance
- ☐ ₇ Not sure
- ☐ ₈ Other_____ (please specify)

69. While deployed, did you take more or less supplements compared to when you are at your home duty station (Fort Carson)?

- ☐ ₁ More
- ☐ ₀ Less
- ☐ ₂ Just started taking dietary supplements during this last deployment

If Yes, how much MORE **OR** how much LESS?

More		Less	
One additional supplement	☐ ₁	One less Supplement	☐ ₁
Two additional supplements	☐ ₂	Two less Supplements	☐ ₂
Three additional supplements	☐ ₃	Three less Supplements	☐ ₃
Four additional supplements	☐ ₄	Four less Supplements	☐ ₄
Five additional supplements	☐ ₅	Five less Supplements	☐ ₅
Six additional supplements	☐ ₆	Six less Supplements	☐ ₆
Seven additional supplements	☐ ₇	Seven less Supplements	☐ ₇