

**IN THE DISTRICT COURT OF THE UNITED STATES
FOR THE MIDDLE DISTRICT OF ALABAMA
NORTHERN DIVISION**

UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civil Action No. 2:15-cv-00368-MHT-SRW
	)	
STATE OF ALABAMA AND	)	
ALABAMA DEPARTMENT OF	)	
CORRECTIONS,	)	
	)	
Defendants.	)	

**THE PARTIES' JOINT STATEMENT
PURSUANT TO THE MAY 2, 2022 ORDER (DOC. 68)**

Plaintiff, the United States of America, and Defendants, the State of Alabama and the Alabama Department of Corrections (“ADOC” and, together with the State of Alabama, the “State”), hereby submit this joint statement concerning section III.C.1.i.1 of the Consent Decree (doc. no. 11 at 31), pursuant to the Court’s Order of May 2, 2022 (doc. no. 68, the “Order”).

1. On April 26, 2022, the parties filed their Joint Proposal Concerning Section III.C.1.i.1 of the Consent Decree (doc. no. 67, the “Joint Proposal”). The Joint Proposal contained a process for satisfying any outstanding obligations associated with section III.C.1.i.1 of the Consent Decree, including identifying steps to take, persons and entities to involve, and the manner to involve them. Doc. No. 67 at 1-3. Specifically, the Joint Proposal contained a process to further engage the Alabama Peace Officers Standards and Training Commission (“APOSTC”) concerning the physical fitness entry standards for entry-level corrections officer positions in light of the Assessment and Implementation of Occupational Physical Fitness Standards across the ADOC’s Security Staff completed by John Garner, Ph.D. and Grant Mouser, Ph.D. with Troy University (the “Troy study”).

2. Consistent with the Joint Proposal, the State reached out to APOSTC, including Chief Alan Benefield, Executive Secretary of APOSTC, to inform APOSTC of the Troy study and to propose changes to the physical fitness entry standards for entry-level corrections officer positions. ADOC sought a meeting with Chief Benefield and APOSTC representatives to discuss the Troy study and the recommendations contained in the Troy study. ADOC envisioned, as stated in the Joint Proposal, “this initial meeting starting a broader conversation concerning the APOSTC physical fitness entry standards for correctional staff that w[ould] culminate in a meeting among ADOC, APOSTC, the Monitor, and counsel for the parties.” *Id.* at 2. A broader meeting with APOSTC, however, proved unnecessary.

3. On May 5, 2022, Elliott Sanders, ADOC’s Director of Training; Dr. Kelley Mautz, Deputy Commissioner of Women’s Services; Carrie McCollum, ADOC’s General Counsel; and Dr. Grant Mouser (an author of the Troy study) attended a meeting with APOSTC representatives, including Chief Benefield. During the May 5, 2022 meeting, ADOC and APOSTC representatives discussed the Troy study—a study with recommended standards validated for the purpose of identifying the best testing methods in assessing the physical agility/capabilities of prospective correctional officers in Alabama and to identify the minimal fitness requirements for Alabama correctional officers based on job duties and incumbent staff capabilities. ADOC proposed the following changes to the physical fitness entry standards for entry-level corrections officer position based on the Troy study:

- (a) A modification of the current agility test to increase the relevance to the job duties of a correctional officer. ADOC will retain the overall length of the course, the dummy drag, and the balance beam. However, the vehicle push will be replaced with a lighter weighted sled push; the fence/wall climb will be replaced with a climb over and under hurdles; and traversing a small window will be removed from the agility test.
- (b) Push-ups and sit-ups will remain a part of the physical fitness entry standards, but will become a maximal exercise test.

- (c) A step test will be added to the physical fitness entry standards, requiring applicants to step up and down a 12-inch step as many times as possible in one minute.
- (d) The 1.5 mile run will be eliminated from the physical fitness entry standards and replaced by a 300-meter sprint and dummy hold test.
- (e) A new scoring system will exist for the physical fitness entry standards. Tests involving repetition (such as push-ups, sit-ups, and steps) are all maximal exercise tests. The combined number of repetitions will be recorded for all tests involving repetition. Similarly, the agility test and 300-meter sprint will also be maximal exercise tests, with the total number of seconds for each event added together and recorded. A passing/failing score will be based on overall performance to avoid a single failed event eliminating a candidate. The fiftieth (50th) percentile of incumbent testing places the minimal standard for the total time and total repetitions at (133 seconds and 90 repetitions). Repetitions and time are mathematically pared to create the following passing criteria: (i) total time greater than 133 seconds will require a higher number of repetitions to achieve a passing grade; (ii) total time less than 133 seconds will require a lower number of repetitions to achieve a passing grade.

See **Exhibit 1**, April 29, 2022 Email from E. Sanders to APOST and ADOC Validation Study Memo. attached thereto.

4. At the conclusion of the May 5, 2022 meeting, APOSTC representatives indicated support for the changes proposed to the physical fitness entry standards identified above. APOSTC even made a recommendation that the weighted sled push contain the same weight as the dummy drag of 165 pounds. Dr. Mouser and Director Sanders validated the sled weight change and confirmed, after testing, the sled weight change did not negatively impact the performance of men or women. At the recommendation of APOSTC and with the approval of Drs. Garner and Mouser, ADOC further modified the physical fitness entry standards concerning the weighted sled push to make the sled weight 165 pounds.

5. The overwhelmingly positive response from APOSTC negated the need for any further meetings among ADOC, APOSTC, the Monitor, and counsel for the parties. Instead, with

Chief Benefield's support for these proposed changes to the physical fitness entry standards, ADOC proceeded with the next step: a presentation by ADOC of the proposed changes to the physical fitness entry standards during the next scheduled APOSTC meeting of Commission members on June 1, 2022.

6. After ADOC's June 1, 2022 presentation of the proposed changes to the physical fitness entry standards, ADOC understands that a majority of the 7-member APOSTC approved ADOC's proposed changes to the physical fitness entry standards reflected in the Troy study. Specifically, APOSTC approved a 3-year pilot program using the proposed changes to the physical fitness entry standards reflected in the Troy study (as modified as it relates to the weighted sled push), after which time APOSTC will review the data to determine the effectiveness of the change in physical fitness entry standards and make a decision about any need to further revise the physical fitness entry standards to ensure those standards are appropriate for a corrections environment and result in roughly equal pass-rates for men and women. APOSTC will begin using the new physical fitness entry standards during the Corrections Training Academy commencing on October 10, 2022.

7. The Troy study and subsequent work related to the weighted sled push validated the proposed physical fitness entry standards for a corrections environment and the proposed physical fitness entry standards, coupled with the new scoring system, reflect adjustments that will result in roughly equal pass-rates for men and women based on the Troy study. Because APOSTC approved the proposed changes by ADOC to the physical fitness entry standards for entry-level corrections officer positions during its June 1, 2022 Commission meeting, and those changed standards will be implemented starting October 10, 2022, ADOC believes the obligations contained in section III.C.1.i.1 of the Consent Decree have been satisfied. The United States

believes these developments represent significant progress toward achieving compliance with the Consent Decree.¹ The State will keep the Monitor and DOJ reasonably informed about ADOC's experience under the new standards for entry-level corrections officer positions, after implementation at the onsite recruiting events immediately and during the Corrections Training Academy commencing on October 10, 2022, so the Monitor can assess compliance with this provision III.C.1.i.1.

In compliance with CM/ECF Civil Administrative Procedure II.C.3., the Parties hereby certify that they have agreed to have their names electronically signed to this Joint Statement.

Respectfully submitted this 29th day of June, 2022.

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¹ While the United States views the implementation of the Troy study recommendations as a significant step forward in achieving compliance with the Consent Decree, we have not examined the study for any other purpose.

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CERTIFICATE OF SERVICE

I hereby certify that on June 29, 2022, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF system, which will send notification of such filing to all participants.

/s/ Matthew B. Reeves

Of Counsel

Exhibit 1

From: Sanders, Elliott (DOC)

Sent: Friday, April 29, 2022 7:59 AM

To: Benefield, Alan <Alan.Benefield@apostc.alabama.gov>; Tew, Neil <Neil.Tew@apostc.alabama.gov>; Arrington, Adrian <adrian.arrington@apostc.alabama.gov>

Cc: McCollum, Carrie (DOC) <Carrie.McCollum@doc.alabama.gov>; Lawley, William (DOC) <William.Lawley@doc.alabama.gov>; James Grant Mouser <jmouser@troy.edu>

Subject: Correctional PAAT Validation Study

Chief Benefield,

Troy University and the ADOC has completed the Correctional PAAT validation study. Attached are all documents associated with the validation study for your review. As discussed yesterday, we will give a formal presentation of the validation study on May 5th. Myself and Dr. Grant Mouser will be in attendance and be able to answer any questions that you may have. I look forward to seeing you next week and have a great weekend.

Respectfully,

Elliott Sanders
Director of Training
Office 334-567-1440
Cell 334-805-7187

Modified Test Battery Script

Modified Agility Test:

- o TIME START
- o Sled Push (90 lbs)
 - Sprint 50 yds. to next obstacle
- o Obstacle Over Under
 - Sprint 63 yds. to next obstacle
- o Balance Beam (15ft)
 - Sprint 25 yds. to next obstacle
- o Weight Drag (165 lb for 15 ft)
- o TIME STOP

A. PHYSICAL AGILITY.

The physical agility component of the test simulates certain specific activities routinely expected of a law enforcement officer or correctional officer and consists of events designed to measure minimum levels of endurance, strength, agility, and coordination.

This test simulates any number of job-related activities such as the moving of an object or small structure, jumping from different levels, climbing stairs, walking along walls, rafters, pipes, or beams while in foot pursuit or while checking buildings for suspects. A period of running is incorporated into each of the events to simulate the apprehension and control of a fleeing suspect or responding to a call across the corrections campus.

Metric Collected: Total Time Elapsed

Event 1 – Pushing

This event requires pushing a training sled loaded with ninety (90) pounds a distance of fifteen (15) feet across a level surface. This will demonstrate the applicant's ability to remove or assist in the removal of an object or debris in the way of the path needed to traverse.

Event 2 – Hurdle Over/Under

The applicant will step over a twenty-seven (27) inch hurdle, followed by moving under a forty-two (42) inch hurdle, then the applicant will step over a twenty-seven (27) inch hurdle, followed by moving under a forty-two (42) inch hurdle for a total of two overs and two unders. The hurdles will be spaced four (4) feet apart. The applicant should move through this as quickly as possible WITHOUT disturbing the hurdles.

The applicant shall not jump, dive, or swing through the hurdles. The applicant must step over/under the hurdle as prescribed. If the applicant does not negotiate the obstacle properly, they must go back to the beginning and negotiate it as prescribed.

This ensures that the applicant has sufficient body mobility to step through an obstacle.

Event 3 – Balance

This event requires surmounting a six (6) inch by six (6) inch beam suspended one (1) foot in the air and walking a distance of fifteen (15) feet. At the end of the beam, the applicant is required to dismount the one foot distance to the ground.

If the applicant steps off of or falls from the beam prior to reaching the end, they must go back to the beginning of the beam and negotiate it as prescribed.

The balance beam is a combination test demonstrating the ability to maintain balance while moving forward on a flat surface to a narrow surface and back to a flat surface again. Minimum levels of both balance and coordination are required.

Event 4 – Weight Drag

The applicant is required to run a distance of twenty-five (25) yards and then lift, pull, or drag a dead weight object (dummy) approximately one hundred sixty-five (165) pounds for a distance of fifteen (15) feet. The applicant will drop the weight at the finish line.

This test is designed to gauge the applicant's ability to extricate a human being from a dangerous or compromising situation.

This concludes the physical agility phase of the examination. After a minimum of a twenty (20) minute rest period, applicants will begin the sprint battery.

Sprint & Hold Test:

- o Time Start
- o 300m Sprint
- o Time Stop
- o 10 second Dummy Hold

- Every second the candidate cannot hold the dummy below ten (10) seconds, the time is added to the candidate's time

The purpose of this test is to assess the applicant's ability to react appropriately, respond to an emergency call in a timely manner, and act accordingly to restrain another human upon response. This will assess anaerobic power and muscular strength/endurance.

Metric Collected: Total Time Elapsed + Time unable to hold dummy (10 s maximum)

Event 1 – 300 Meter Sprint:

The applicant will sprint 300 meters (3/4 of a lap on the 400 m track) for time.

Event 2 – Dummy Hold:

Immediately after the sprint is completed, the applicant will hold a dead weight object (dummy), approximately one hundred sixty-five (165) pounds for ten (10) seconds. The dummy will be positioned by the test administrator(s) so that the applicant may grasp the dummy under its "arms" and hold at a level minimum to belt level of the applicant for a total of ten (10) seconds. The applicant must lift the dummy up until the applicant achieves an upright body position. Any time under ten (10) seconds will result in that amount being added to the sprint time.

Step Up Test:

This event requires completing as many step up/downs on a twelve (12) inch step in 60 seconds. The applicant should start with both feet on the ground. Upon the time start, the applicant will step up with one foot and immediately follow with the other until both are on the step. They will then step down one foot at a time until both feet are on the ground. This constitutes one (1) repetition. The total number of completed in 60 seconds will be counted. This will demonstrate the applicant's ability to ascend flights of stairs at a rapid pace.

Metric Collected: Total repetitions in 60 seconds.

Push Up Test:

On the "Get Ready" command, the applicant will assume the front-leaning rest position (push-up) with the arms straight, elbows locked, hands about shoulder width apart, and palms placed flat on the floor. The feet may be together or up to twelve (12) inches apart. The body should be essentially straight when viewed from the side, from the shoulders to the ankles.

A rater lies facing the participant with their fist placed under the participant's chest. On the "Start Push-ups" command, the applicant begins the push-up by bending the elbows and lowering the entire body until the chest touches the fist (the upper arms should be parallel to the ground at this point).

The applicant finishes the push-up when they return to the starting position by raising the entire body until the arms are fully extended. The applicant may rest in the up (arms straight and elbows locked) position only. The body must remain in a generally straight line and as a single unit for the entire repetition (NO arching or bowing of the back).

Failure to keep the body straight, failure to properly lower the entire body until the chest touches the Test Administrator's fist or failure to return to the up position will result in incorrect movements. Incorrect movements will not be counted.

Allowing any part of the body other than the hands or feet to rest on the ground will result in immediate disqualification.

Each applicant will complete as many repetitions in sixty (60) seconds.

Metric Collected: Total repetitions in 60 seconds.

Sit-Up Test:

On the "Get Ready" command the applicant assumes the starting position by lying flat on their back with knees bent at forty-five (45) degrees. Feet may be together or up to twelve (12) inches apart, resting flat on the ground and may be stabilized by a partner holding the ankles with the hands only. The applicant's fingers must be interlocked behind the neck or head.

On the "Start Sit-ups" command, the applicant begins raising the upper body to the up position with both elbows touching their knees.

The applicant finishes the sit-up when they lower their body until the upper portion of the back (shoulder blades) touches the mat. The head, hands, arms, and elbows do not have to touch the ground.

The up position is the only authorized rest position. Applicants lying flat on the floor failing to make an effort to continue the test or to reach the authorized rest position will be immediately disqualified

Failing to reach the up position, failing to keep the fingers locked behind the neck or head, arching or bowing the back and raising the buttocks off the ground to raise the upper body, or allowing feet to leave the floor will result in incorrect movements. Incorrect movements will not be counted.

Each applicant will complete as many repetitions in sixty (60) seconds.

Metric Collected: Total repetitions in 60 seconds.



KAY IVEY
GOVERNOR

State of Alabama Department of Corrections

Alabama Criminal Justice Center
301 South Ripley Street
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JOHN HAMM
COMMISSIONER

April 29, 2022

Chief Alan Benefield, Executive Secretary
Alabama Peace Officer Standards and Training Commission
RSA Union Building – 100 N Union Street, Suite 600
Montgomery, AL 36130

RE: Correctional Physical Standards Validation Study

Dear Chief Benefield,

In 2020, the Alabama Department of Corrections (ADOC) partnered with Troy University to conduct a validation study, for the purpose of identifying the best testing methods in assessing the physical agility/capabilities of prospective correctional officers in Alabama. Secondly, the purpose of this validation study is to identify the minimal fitness requirements for Alabama correctional officers based on job duties and incumbent staff capabilities.

The validation study has been completed and the ADOC is ready to present the validation study to the commission for review and consideration. Below is an overview of changes that are being proposed by the ADOC.

1. The current agility test be modified to increase the relevance of its applicability to the job duties of a correctional officer. The overall length of the course, the dummy drag, and the balance beam will all remain the same. The pushing of a vehicle will be replaced with pushing a weighted sled. The fence/wall climb will be replaced with over and under hurdles. Traversing a small window will be removed from the test.

2. Push-ups and sit-ups will remain a part of the test and will become a maximal test. The standards for performing each of these tests will remain the same.
3. A step test will be added. Applicants will step up and down a twelve-inch step as many times as possible in one minute. This is also a maximal test.
4. The 1.5 mile run test will not be utilized.
5. A 300-meter sprint and dummy hold test will replace the 1.5-mile run.
6. A new scoring system will also be utilized with this new test. Repetition events are all maximal effort events (Sit-ups/Push-ups/Steps). The combined number of repetitions will be recorded. The agility test and sprint test will also be maximal effort tests. The number of seconds for each event will be added together and recorded. The passing or failing of this test will be based on overall performance. The number of repetitions and the number of seconds is relational to each other in scoring. As repetitions increase the allowable number of seconds also increases and transversely as the total number of seconds decreases, the required number of repetitions decreases to achieve a passing score.
7. Retesting in the first week of academies will remain the same as before.

I would like to schedule a meeting with you to begin discussing this in greater detail. I am sure that there will be many questions. Attached are all documents and data associated with the validation study.

Your time and consideration are greatly appreciated.

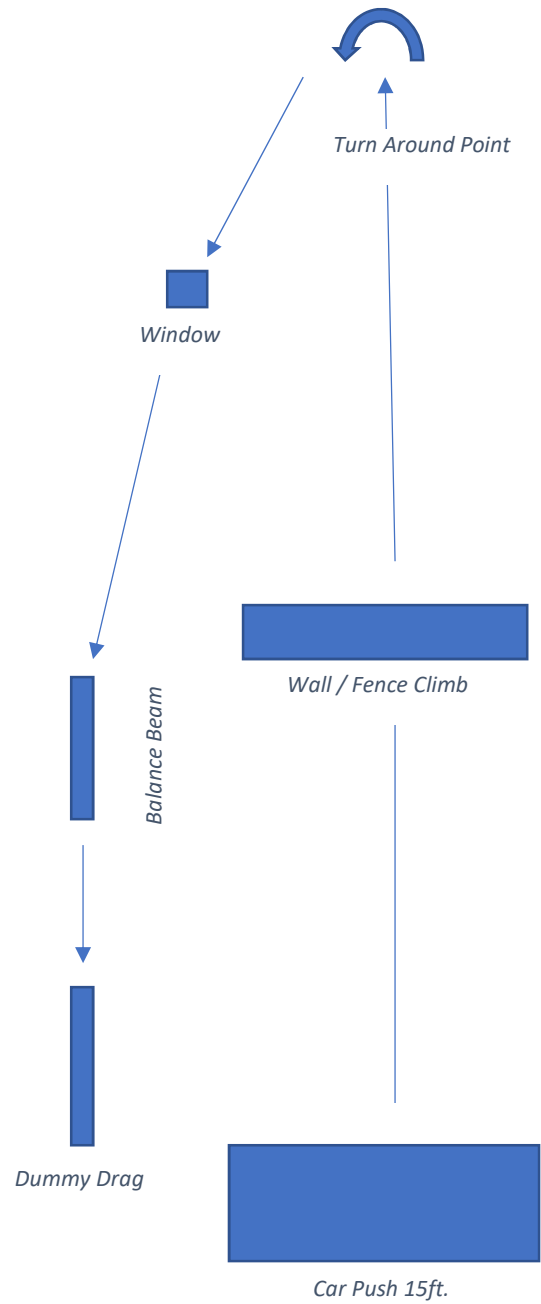
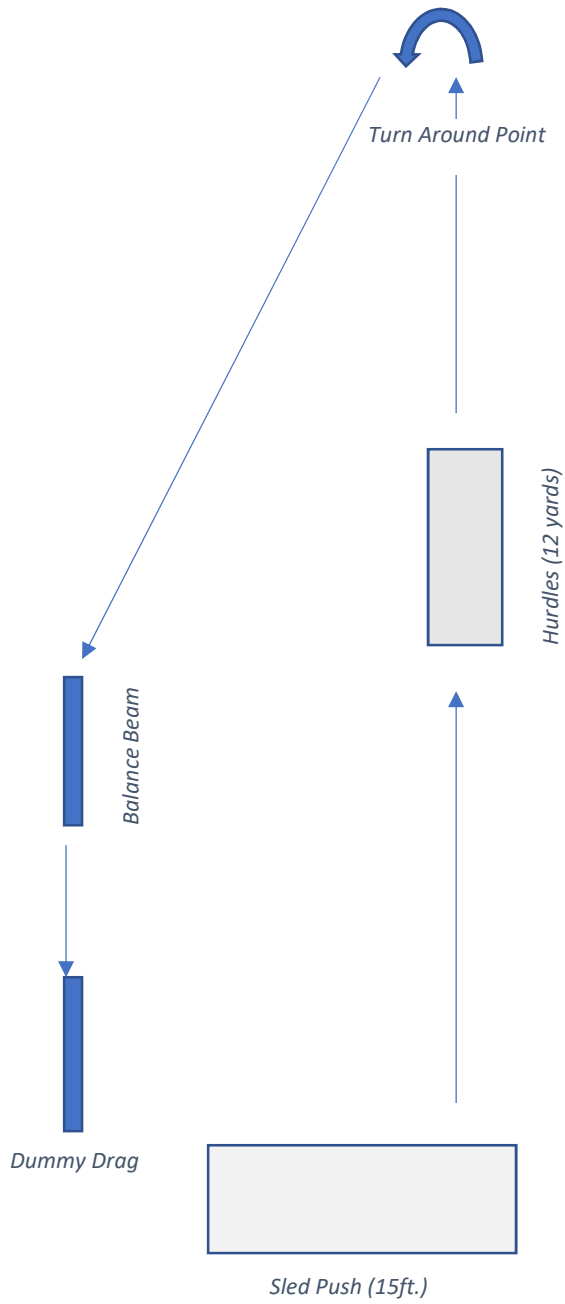
Respectfully,

A handwritten signature in black ink, reading "Elliott Sanders". The signature is fluid and cursive, with the first name "Elliott" and last name "Sanders" clearly distinguishable.

Elliott Sanders, Director of Training
Alabama Department of Corrections

ECS/tlp

Enclosures



**Assessment and Implementation of Occupational Physical Fitness Standards
across the ADOC's Security Staff**

Prepared for the Alabama Department of Corrections by John C. Garner, PhD, CSCS*D, and J.
Grant Mouser, PhD, from the Department of Kinesiology and Health Promotion at Troy
University, Troy, AL

John C. Garner, PhD, CSCS*D is the Interim Dean and Professor of Exercise Science in the Department of Kinesiology and Health Promotion, College of Health and Human Services, at Troy University. He specializes in biomechanics and the science of human movement.

J. Grant Mouser, PhD, is an Associate Professor of Exercise Science in the Department of Kinesiology and Health Promotion at Troy University. He specializes in exercise physiology and adaptations to resistance exercise.

This document contains the background, methodology, rationale, and modified testing battery/scoring mechanism, as well as both strength and conditioning and nutrition guides for DOC candidates and current employees.

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Background

“The majority of law enforcement work is done with a pad, pencil, and radio until the lid comes off and hell breaks loose, at which time the officer may need the physical attributes of an athlete to survive and succeed” (Law Enforcement Technology, 1993). As such, most of strength and conditioning professionals have developed the term “tactical athlete” to distinguish the job requirements needed to successfully serve as an agent of law enforcement. Tactical athletes share several attributes with all levels of athletes, such as physical fitness and teamwork, but differ from the traditional athlete in many ways. Even within the global terminology of “tactical athlete” there remains occupational specificity among the different avenues of engagement. Therefore, training and testing must be detailed to the type of job performed and the environment in which it occurs. Further, to develop a regimen or test battery specific to the job, the facilitator must conduct both observational and interview-based analyses to determine the employee’s ability to perform a specific task and sustainability.

With the approval of the Pendleton Civil Service Reform Act in 1883, the first commission in the United States was enacted to develop competitive examinations of the fitness of civil service applicants. (Enrolled Acts and Resolutions of Congress) While it was a federal directive, it was the first law to recognize the utility of fitness assessments in the candidate selection process. Within the last 50 years, the United States has had to comply with further legislation protecting applicants from discriminatory hiring practices leading to the development of occupational standards that must be met across all applicants, regardless of age, race and gender. Occupational task performance underscores the importance of measuring both general health and fitness plus the physical ability to complete tasks that may be extrapolated to job expectations. While some recommend that a job simulation test battery may be the best predictor of job success it comes with several major contraindications. These include, but are not limited to: skill and fitness may be confounded, job tasks may include a learning curve that are not readily practicable, assumption of job components being accurately simulated. (Bonneau, 2001) Examples of job simulation tests are easily extracted from daily job duties and responsibilities. The currently accepted physical fitness characteristics demanded by the tactical athlete include muscular strength, muscular endurance, muscular power, aerobic fitness, agility and flexibility. Similarly, a fitness only test battery exhibits similar contraindications. As such, it is recommended to create a physical assessment test that incorporates a combination of these test batteries (Alvar, Sell, & Deuster, 2017). Further, it is suggested that the assessment should include specific job tasks or indicators embedded within the physical fitness components.

Law enforcement personnel must be ready to perform a myriad of physically demanding tasks spanning the spectrum from aerobic capacity to muscular strength. An example would be an officer responding to an emergency call for foot pursuit, requiring aerobic capacity, immediately followed by a restraint or evacuation, requiring muscular strength or power. The National Strength and Conditioning Association (NSCA) sponsored an event that brought together numerous experts on both physical fitness characteristics and tactical activities. Following this meeting, the panel determined six (6) characteristics that exemplified the needs of a tactical athlete and recommendations on including these in predictive field tests.

Muscular Strength is the maximum force that can be generated by a muscle or muscle group. (Haff & Triplett, 2016) The most accurate method of measuring muscular strength is through a one (1) repetition maximum lift (1RM). Although it is the most accurate, it is extremely time consuming and difficult for untrained participants. The most common and accepted alternative to a 1RM is to complete multiple repetitions of a biomechanically similar exercises/lifts and extrapolate using published and validated prediction equations. Examples of this may include, but are not limited to push-ups, pull-ups, incremental dynamic lifts, and handgrip dynamometers.

Muscular Endurance is the ability of a muscle or muscle group to repetitively perform work for an extended period of time. (Haff & Triplett, 2016) Most organizations measure muscular endurance using assessments that measure the maximal number of repetitions of exercises such as sit-ups or squat thrusts that can be performed in a standardized length of time.

Muscular Power is defined as the rate of work per unit time, thus making it a function of strength and speed. Whereas muscular strength is the maximal amount of force generated, muscular power is influenced by the rate at which strength can be expressed. For example, dragging an injured or unconscious person to safety as quickly as possible is a common task in law enforcement operations. This task not only requires the strength to lift a portion of the victim's body weight but also the ability to move the victim quickly to safety. One method to test muscular power uses an isokinetic machine (Wingate test), but it can be cost prohibitive. Field-expedient tests such as the standing broad jump and dummy drag have been correlated to muscular power (Hauschild, et al., 2014).

Aerobic Capacity is the ability to exercise large muscle groups at a level somewhere between moderate to high intensity for more than a few minutes. (Haff & Triplett, 2016) It is typically measured as the amount of oxygen consumed per kilogram of body weight in one (1) minute. The most precise test for measuring aerobic fitness is gas analysis (using open-circuit spirometry to measure the gas exchange between oxygen and carbon dioxide in the airway) during maximal aerobic exercise (e.g., running, biking). Although this method is accurate, it requires the administrator to have a high level of technical competence, is best performed in a controlled environment, requires individualized testing, and can be cost prohibitive. In lieu, other field-expedient methods can be used to closely predict aerobic fitness. Running tests of distances from 1.5 to 3 miles (2.4-4.8 km) continue to be used by military and paramilitary organizations to predict aerobic fitness.

Flexibility is the ability to move a joint through the entire range of motion (34). Flexibility tests should be performed to assess the ability to meet specific occupational demands (Bilzon, Scarpello, Bilzon, & Allsopp, 2002). Flexibility may be measures independently through tests such as the sit-and-reach assessment or can be incorporated to obstacle/occupational specific movements such as moving through or between objects.

Agility is the ability to change movement speed and direction. (Haff & Triplett, 2016) An example of agility is an officer traversing, surmounting, and dismounting various obstacles in an expedient manner to respond to an emergent call or while pursuing a subject. Agility is most often incorporated in to existing physical assessments and is not tested independently.

Currently, Alabama Department of Corrections Officer Candidates must take and pass the Alabama Peace Officers Standards and Training Commission's Physical Agility/Ability Test (the "PAAT"). This test of physical fitness and ability must be passed "as an entry-level requirement to the law enforcement or correctional officer training academy and as a condition of certification." Presently, Department of Corrections Officer Candidates must pass the same physical fitness tests that Peace Officers must also pass. This brings with it the possibility that physical fitness requirements may differ between Correctional Officers and Peace Officers. The purpose of this project was to determine the physical fitness requirements of Alabama Department of Corrections Officers, and to create a modified test battery that might better assess the physical fitness ability of a Correctional Officer candidate with relation to the job tasks required

Methodology

This section serves to outline and describe the methodology employed during the course of this project.

Montgomery Meeting

On August 19, 2019, we visited the Alabama Department of Corrections office in Montgomery to discuss with Associate Commissioner Matthew Brand and Director of Training Elliot Sanders the current physical fitness test employed by the Department. During this discussion we had the chance to hear about the physical fitness testing requirements for Correctional Officer candidates, and ask questions related to the test.

From this discussion, we learned the following information:

- Correctional Officer candidates must take and pass the same physical fitness test battery (the "PAAT") that Peace Officer candidates must take and pass
- This test battery consists of an agility course, a test of both sit-ups and push-ups, and a 1.5-mile run
- There is a question as to whether the PAAT accurately assesses the physical fitness levels needed to perform the duties of a Correctional Officer
- There was a desire for a test battery that more accurately assessed physical fitness readiness for a position as a Correctional Officer, without lowering the testing standards in such a way that would put possible candidates at risk of being unable to perform the requirements of the position
- A modified testing/training protocol has been employed for the last three years by the DOC in which participants take the PAAT test at week 1, 7, and 8 of their training program, and that the candidates must only pass the test given during week 8 in order to pass that portion of their training
- Prior to this modification, Correctional Officer candidates were required to pass the test given during week 1, otherwise they would be released from the training program
- This modified testing/training time appeared to increase retention of Correctional Officer candidates

- This extended testing/training program was due to end shortly and the program would revert to the week 1 test requirement

Following this meeting, we scheduled a visit to observe the PAAT in person in Selma.

Selma Visit

On September 30, 2019, we visited the Department of Corrections training facility in Selma to meet Director Sanders and to observe the then current class of candidates perform their week 8 PAAT. While there, we were given access to the training facility's weight training/equipment room, and we were able to observe the layout of the agility course involved in the PAAT. We were also able to interview several of the Department's training Officers about the individual tests in the battery, their experience working in various detention centers in Alabama, and their thoughts on both the physical fitness requirements and how the tests might or might not accurately gauge the requirements of the job.

From these observations and interviews, we were able to learn the following about the test battery, the job duties of Correctional Officers, and the training facility itself:

- In many trainers' experience, the sit-up and push-up tests were rarely a problem for candidates
- Likewise, the agility course was not usually a problem, except for the 165 lb. dummy lift/drag, which was difficult for smaller individuals
- Almost all trainers felt that the 1.5 mile run was the hardest portion of the PAAT for officer candidates, that it likely was not a good indicator of the requirements of a Correctional Officer, but that they felt it should remain due to the need for mental toughness during that portion of the test (quite literally, "grinding it out")
- Many trainers mentioned that a large portion of the job of Correctional Officer was not physical fitness, but mental alertness
- Since the training facility is shared with other state agencies, the weight room was not available at all hours of the day for directed, purposeful training
- The weight room is equipped with a large variety of weight machines and free weights, allowing the possibility of designing a weight-based training program without incurring additional equipment costs to the Department of Corrections
- Candidates arrived on Sunday evening and returned home Thursday afternoon/evening during the training program, creating a break in training during which time the candidates are not being observed/might not continue physical fitness training

Following the PAAT observation, a site visit to Kilby Correctional Facility was scheduled.

Kilby Visit

On October 24, 2020, we visited the Kilby Correctional Facility and met with Commissioner Brand, the wardens, and their support team. We were given a tour of the entire facility, and the opportunity to ask questions of the wardens, their support team, and other Correctional Officers that we met during the visit. From this tour and these interviews, we learned the following:

- Almost universally, Correctional Officers stated that walking was the physical activity that they spent much of their day performing
- A small portion of the job (e.g., responding to incidents) absolutely required large amount of vigorous physical activity
- Correctional Officers also mentioned the importance of being able to run/sprint somewhere and still being able to make a quick decision/choice when they arrived

Validation Study Design / COVID19 Response

We set about designing a study to examine the typical values associated with three of the major components of the PAAT (the sit-up, push-up, and 1.5 mile run tests). A large group of healthy, college-aged individuals was to be recruited from the Troy University student population and surrounding areas. These participants would perform the three tests in order to give representative values that could be expected on a pre-test of sit-ups, push-ups, and the 1.5 mile run. Unforeseen circumstances relating to the COVID19 pandemic and subsequent shuttering of university campuses, state-issued guidelines banning or restricting groups of people, and Troy University's subsequent decision to close research facilities made performing this study impossible.

In response to this, we chose to search the research literature for any examples of studies in similar populations in which performance in either sit-ups, push-ups, or the 1.5 mile run were measured. In looking for such studies, we searched the tactical athlete literature (often involving peace officers, firefighters, and military recruits), and the young, healthy individual population (due to the nature of academic research, these typically range in age from 18 to 30 years old). We similarly searched for studies that looked at both single measurements (determining how many sit-ups or push-ups could be performed in 1 to 2 minutes) or studies that performed pre-tests and post-tests, with some amount of training in between tests. Training periods ranged from 6 weeks to 6 months, and included classroom-based fitness classes, military boot camps, and police academy training programs.

This search was conducted to further compare the current Department of Corrections standards against populations that are representative of similar recruits the Department of Corrections may come into contact with, and against the Cooper Physical Fitness Standards, which are broken down into age ranges for both men and women, with subsequent ranking of the 5th to 95th percentiles. This research also allowed us to create a range of values, following training, that might be expected of the typical candidate to improve their PAAT component scores by. For example, the weighted average of improvements in sit-up performance following training was 9.6 reps (see section marked Improvement in Performance).

Trainee Improvement Research

We conducted a review of the research literature to gain a better understanding of how much improvement can be expected of officer candidates in each section of the physical fitness assessment (sit-ups, pushups, and 1.5 mile run). In most of the research found, the results apply to individuals between the ages of 18 and 44 years of age (the predominant age range in which these studies have been conducted) who are otherwise healthy (e.g., free from cardiovascular, metabolic, and weight-related diseases). Much of this research was conducted in police academy candidates, military recruits, and college-age students participating in physical fitness classes. The training periods over which these improvements occurred spanned from six (6) weeks to six (6) months with a frequency of between one (1) day per week to six (6) days per week. It should be noted that participant testing, before and after training, do not always follow the one (1) minute testing procedures for the sit-up and push-up tests employed by the Alabama Department of Corrections.

Improvements in Sit-Up Performance

Four research studies were found to have examined improvements in sit-up performance following training. In a study of 24 college-age participants (18-22 years old, average age of 19.6 years old) performing sit-up training three (3) days per week for six (6) weeks, the average number of sit-ups performed in two (2) minutes increased from 77.8 to 84.4 (Baxter, Moore, Pendergrass, Crowder, & Lynch, 2003). In police officer candidates (21-44 years old, average age of 28.1 years old) performing six (6) full months of academy training, sit-up performance in one (1) minute improved from 35.5 sit-ups before training to 47.4 sit-ups after training (Cocke, Dawes, & Orr, 2016). In military recruits (no age range given, average age of 19.2 years old), sit-up performance increased following ten (10) weeks of boot camp from 29 to 45 sit-ups performed in a sit-up test to fatigue (also called “as many reps as possible”) (Dyrstad, Soltvedt, & Hallen, 2006). Smaller improvements are found when training frequency decreases, as is the case with the DeNysschen study (22-33 years old, average age 22.9 years old) which saw an improvement in one (1) minute sit-up performance of only two (2) sit-ups following 12 weeks of once weekly training (DeNysschen, Cardina, Sobol, Zimmerman, & Gavronsky, 2018). Across all four studies, participants increased their number of sit-ups performed by a weighted average of 9.6 repetitions across all testing conditions.

Improvements in Push-Up Performance

Three research studies were found examining improvements in push-up performance following training. The same Dawes study referenced earlier saw an improvement of 20.8 push-ups performed during two minutes from before to after police academy training (Cocke, Dawes, & Orr, 2016). The Dyrstad study saw an improvement of eight (8) push-ups performed to failure following military boot camp (Dyrstad, Soltvedt, & Hallen, 2006). The DeNysschen study examining lower frequency training saw an improvement of 7 push-up performed following training (DeNysschen, Cardina, Sobol, Zimmerman, & Gavronsky, 2018). Overall weighted average improvement in push-up performance was 12.5 push-ups following training in all testing conditions.

Improvements in 1.5 Mile Run Performance

Only two studies specifically examined improvements in the 1.5 mile run. Both the Dawes and DeNysschen studies examined the decrease in time to complete the 1.5 mile run time saw similar

results, with run time improving by 1:15 (one minute, 15 seconds) in both studies (DeNysschen, Cardina, Sobol, Zimmerman, & Gavronsky, 2018) (Dyrstad, Soltvedt, & Hallen, 2006).

Notes on Trainability of Candidates

It should be noted that improvements in physical performance are highly related to the initial fitness level of individuals. Generally, the more physically fit an individual is, the smaller the improvement they will see for any given training program when compared to their less physically fit counterparts. While this carries very little implication for corrections officer candidates who enter the training program at a high level of physical fitness (they will do well in the physical fitness component of the program), it has huge implications for participants who enter the program with low levels of physical fitness. With increased training frequency that pays heed to preventing overuse injury, individuals with lower levels of physical fitness usually see greater improvements in absolute performance following training. With this in mind, we recommend that potential recruits be given a set of criteria that they must meet in order to be accepted into the candidate program, as well as a home-based training program guide (Appendix A) to follow if they do not meet the physical fitness recommendations before applying.

In the present case where, to our understanding, the training program has gone back to the PAAT test being given during the 1st week of training, and that candidates who do not pass this are released from the program, the home-based training guide should be stressed to potential candidates. This will allow them time to train before they enter the candidate program and give them the time needed to improve in any of their scores that might prevent them from passing in the first round.

Notes on Specificity of Training

It should also be noted that, generally, greater improvements in test outcomes (number of sit-ups and push-ups performed, running time) tend to occur when the training program most closely follows the testing procedure. That is, individuals who cannot perform the needed number of sit-ups or push-ups should perform more sit-ups or push-ups during their training program, if they are going to be tested on sit-ups and push-ups. Individuals who cannot run 1.5 miles under the time needed should run more during their training program if they are going to be tested on their running time. While some transfer of training can occur (plyometric squats improving vertical jump performance, for example), the specificity of the training should match closely the mode of testing.

Specific Aims

Specific Aim #1 - Investigate and develop the occupational physical fitness standards specific to the work-related duties of ADOC Correctional Officers and Correctional Officer Candidates:

Although the characteristics are indicative of the ability to perform the physical attributes of the specific occupational task, they are not perfectly predictive of success for an officer within the Department of Corrections. Using existing literature, observational analysis of both the training site and correctional facilities, and interviews with officers of various levels ranging from officer candidates to an Associate Commissioner, an additional component of need emerged. It was indicated that more specific physical fitness and agility testing was needed, geared toward the unique needs of corrections officers.

While the current Alabama Peace Officers Standards and Training Commission Physical Agility/Ability Test has many strengths and covers many of the characteristics needed to be a successful law enforcement officer, modifications must be made to specifically model a successful Alabama Department of Corrections Officer. The following is an overview of the modifications suggested:

- Timed Physical Agility Test Modification
 - Sled Push
 - Obstacle Over/Under
- Addition of a new test
 - 300m Sprint followed by dead weight lift and hold
- Physical Fitness Test Modification
 - Step Up test
 - Candidates must perform as many repetitions in each test as possible during 60 seconds
- Scoring rubric to create a total pass/fail score
 - Incomplete on any of the agility tests is a fail
 - Physical fitness test is scored for total number of repetitions across three exercises

Agility Test Modification:

The Physical Agility Test was viewed across all levels as the most similar to a response a future DOC officer would encounter. However, two components were listed as not realistic.

- First, the car push was often dismissed as an event that would typically not exist in the current DOC environment. We realize that specificity of a car push may not exist, but the need to move a fallen implement or structure is a realistic endeavor during a response call. As such, we suggest replacing the car push with a sled push. Push sleds are readily available, relatively inexpensive, and put the candidate in a realistic position. The sled weighted to 90 pounds should be pushed fifteen (15) feet across a level, grassy surface. This will demonstrate the applicant's ability to remove or assist in the removal of an object or debris.

- The inclusion of an obstacle over/under test, requiring the candidate to navigate over an obstacle, then under another obstacle, repeated twice (over, under, over, under) following a sprint, without knocking any obstacle over, was added. This test of agility was included as several interviewees reported the need to navigate over obstacles including bunk beds, desks, and tables.
- Below is an outline of the modified Physical Agility Test:
 - o TIME START
 - o Sled Push (15ft)
 - 50yd run
 - o Obstacle Over/Under
 - 63yd run
 - o Balance Beam (15ft)
 - 25yd run
 - o Weight Drag (165lb for 15ft)
 - o TIME STOP

Addition of New Test (Sprint & Hold)

Across the realm of tactical strength and conditioning test batteries, the 300-meter sprint is a commonly occurring test. This test has been omitted from the existing PAAT Battery. The 300-meter sprint addresses muscular strength, power, and endurance. Further it is a realistic distance that an ADOC Officer may be asked to run to respond across a campus facility. To make the test more realistic and address the concerns, we suggest a modification from a basic 300-meter sprint. The modified test will include a 300-meter sprint, and a dummy “hold”. A realistic example of this test would be an officer who hears a call and must make a quick decision to respond by sprinting to the location (300-meter sprint), and then restrain an inmate or assist another officer. The dummy will be positioned by the test administrator(s) so that the applicant may grasp the dummy under its “arms” and hold at a level minimum to belt level of the applicant for a total of ten (10) seconds. Any time under ten (10) seconds will result in that amount being added to the sprint time.

- Below is an outline of Sprint/Hold Test
 - o Time Start
 - o 300m Sprint
 - o Time Stop
 - o 10 second Dummy Hold*

* Every second the candidate cannot hold the dummy below ten (10) seconds, the time is added to the candidate’s time

Physical Fitness Test Modification

During the interview process, many respondents indicated that climbing stairs was very common at each facility, and so the inclusion of a third physical fitness component was added in the step up test. In this test, candidates must step up on a 12in step with one foot, then the other foot. They then step back to ground level with one foot, then the other. A repetition is counted with

each foot is on the same level (one repetition when both feet are on the step, another when both feet come back to the ground).

Each of the three tests (step ups, push ups, and sit ups) are performed for 60 seconds each, and each candidate must perform as many repetitions as possible. This change was made from the previous test, as tests of endurance are highly correlated with general physical fitness levels. At the end of the three tests, the total number of repetitions is calculated for inclusion in the proposed scoring rubric.

New Scoring Rubric

The existing scoring methodology states a minimum score for each of the four test events. If the candidate is able to complete the requirements of the test in the set time, they are given a passing score and allowed to matriculate through the program. If a candidate does not meet the time/repetition requirement for the event, the entire test will be declared a fail. However, concern was expressed over the rigidity of the scoring metric. As such, pilot data was needed in order to propose a new scoring rubric based on current ADOC correction officers' performance, covered in Specific Aim #2, below.

Specific Aim #2 - Administer and evaluate the test battery across ADOC Correctional Officers and Correctional Officer Candidates:

Beginning on June 12th, 2020, and ending on July 10th, 2020, a workplace physical activity survey was sent to ADOC personnel. The survey was anonymous and included questions relating to physical activities that ADOC personnel experience during an average workday. The questions in the survey can be found in Appendix C. When the survey ended, almost 600 ADOC personnel had responded, of which 392 were APOST certified corrections officers and 58 were basic correctional officers. Of these, the breakdown was roughly 80% male and 20% female for APOST certified corrections officers, and 20% male and 80% female for basic correctional officers. Standing and sitting predominated for physical activity for both corrections officers and basic correctional officers, followed by sitting, jogging, and running. Aggregate data can be found in Appendix D.

On January 20th, 2021, we visited the Selma training facility and met with many of the ADOC trainers from multiple training facilities to familiarize them with the proposed modifications to the physical fitness and agility tests. This allowed each training facility to experience the modified test, provide thoughts and comments about the proposed test, and develop a list of equipment that would be needed at each facility. Data sheets were provided to ADOC training personnel to record times and repetitions for this proposed set of tests.

Also beginning in January, 2021, testing on incumbent officers began at ADOC training facilities as time permitted these officers to travel to a facility and participate in these tests. Incumbent officer data was needed to determine the scores that are indicative of a successful ADOC corrections officer. Data collection on 104 incumbent officers as well as 40 ADOC officer candidates was collected through the year by ADOC training personnel and completed by September 29th, 2021, and data sheets were collected and mailed to us for analysis. ADOC

training personnel attempted to match the incumbent data collection as closely to the distribution of the survey respondents as possible (80% male, 20% female).

From the fitness data collected, two determinations were made:

Finding #1: Men and women did not differ in their performance on the modified physical fitness and agility tests.

- We analyzed the performance of men compared to women on both the timed component of the agility test and the total number of repetitions performed on the physical fitness test and found that there were no statistically significant differences in performance. We analyzed possible differences using Bayesian inferential statistics due to the difference in the number of men and women who performed the test, as this allowed for more robust comparisons between groups of differing sizes.

Finding #2: ADOC candidates exhibited higher levels of physical fitness and performance than incumbent officers.

- We analyzed the performance of ADOC candidates compared to incumbent officers on both the timed component of the agility test and the total numbers of repetitions performed on the physical fitness test and found that candidates were statistically significantly faster on the timed components of the agility exam as well as able to perform more repetitions on the physical fitness exam. We used the same Bayesian inferential statistics as above to perform these analyses to account for differences in group size between candidates and incumbents.

Detailed results of these analyses can be found in Appendix E.

Scoring rubric based on incumbent officer data

These equations are based on the results of the incumbent officer testing. The justification for this is that incumbent officers with an average of 9 years in the job can complete all of the physical tasks required of ADOC officers. Three scoring equations for trainees are presented, the first of which uses the average scores of the ADOC incumbents, the second of which uses the 25th percentile scores of the ADOC incumbents, and the third of which uses the 75th percentile of the ADOC incumbents. The first uses the average officer's results. The second allows for slightly fewer fit trainees. The third allows for only more fit trainees. These are provided as examples.

Our requirements for creating these scoring equations were as follows:

- 1) A lower time to complete the obstacle portion of the physical fitness test, the 300m sprint, and the dummy hold implies greater fitness.
 - i. Following discussion with ADOC training personnel, failure to complete any portion of the agility course is grounds for failure of the entire test.
- 2) A higher number of total repetitions in the physical endurance portion of the physical fitness test implies greater fitness.

3) The scoring equations had to be based on the ADOC incumbent officer data to show real-world fitness levels of successful ADOC officers with time on the job showing that they are successful.

To meet these requirements, we first calculated the 25th, 50th, and 75th percentile scores on the obstacle portion of the physical fitness test for the incumbents. We also calculated these same cut points (25th, 50th, 75th percentiles) for the total number of repetitions completed by each incumbent.

To penalize for a higher score in the timed test as well as a lower number of completed repetitions, the following equation was created:

$$\text{Score} = \text{Time to complete Obstacles, Sprint, and Dummy Hold} \times \frac{\# \text{ Incumbent Repetitions}}{\# \text{ Trainee Repetitions}}$$

An example of this using average incumbent data follows:

$$133.3s \times \frac{90}{90} = 133.3$$

Since we are using only incumbent data, this gives us an average passing score of 133.3 **or lower**. Lower numbers are better in this scoring method.

Using the 25th percentile of incumbents (less fit), we get:

$$148.0s \times \frac{72}{72} = 148.0$$

And using the 75th percentile (more fit), we get:

$$115.75 \times \frac{124}{124} = 115.8$$

Assuming a hypothetical trainee who took 165 seconds to complete the obstacle course but completed 123 repetitions on the endurance portion, using the average incumbent reps:

$$165s \times \frac{90}{123} = 165s \times 0.73 = 120.45$$

Since they are lower than the average incumbent cut point of 133.3, they would pass.

Using the above trainee at the 25th percentile on incumbent data, we get:

$$165s \times \frac{72}{123} = 165s \times .59 = 97.35$$

Since they are lower than the 25th percentile incumbent cut point of 148.0, they would pass.

Putting them against the more fit incumbents (75th percentile), however, gives us this:

$$165s \times \frac{124}{123} = 165s \times 1.008 = 166.3$$

This puts them above the cut point of the more fit incumbents at 115.75, so they would not pass. An excel sheet with scoring calculations built in has been provided alongside this document for convenience.

The scoring sheet for ADOC candidates can be found in Appendix F.

Specific Aim #3 - Provide a strength and conditioning program manual to maintain and improve occupational fitness standards developed in the previous Specific Aims.

- Appendix A: Strength & Conditioning Manual
 - Pre-Camp
 - General Workout/Maintenance
- Appendix B: Nutrition Education Manual
 - Pre-Camp
 - General Nutrition/Maintenance

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APPENDIX A: Strength & Conditioning Manual

The tactical field covers many departments ranging from military to law enforcement to fire fighters to paramedics. Each job has physical and mental demands that are to be met. That is why implementing a strength and conditioning program is so important for not only the safety of the public but also for the individual's health. Many times, these individuals work long shifts and are expected to perform task in an instant. They may go from sedentary to all out production in the matter of seconds. That is why it is important for the individual to be in good shape not only physically but mentally.

Physically the individual needs to be able to react quickly and not injure themselves, while mentally staying relaxed and aware of not only the task, but also their surroundings. Physical benefits from an exercise routine include an increase in blood flow, lower blood pressure, lower cholesterol, a reduced risk of diabetes, an increase in stamina, greater range of motion and helps with bone density. The mental health benefits improve depression and anxiety. The thought is the greater health an individual is in mentally and physically the greater the outcome.

The following program was designed in order to prepare the individual for the job at hand and sustain their productivity. The Pre-Camp workout was designed to get the individual in physical shape by increasing strength, endurance and flexibility. The general fitness plan was designed to sustain the individual's physical readiness.

Pre-Camp Design

The Pre-Camp workout should be used as soon as possible with 4-8 weeks out being the ideal time to begin. It is designed to be performed in a superset format. While you are resting from 1A perform 1B. Complete the 3 sets of 1A and 1B before you move on to the next number of A and B and so on.

The running sections on Sessions 2 and 4 should be performed to the best of your ability. If you experience dizziness or chest pain during it or any of the workouts stop and seek medical attention. It is important that you stay strict on the rest times on session 2 and the change times on session 4. In session 2 if it asks for a 30 second break take it! Use no more than 45 seconds between the time you finish your run and start your pushups and sit-ups. When you are finished with your pushups and sit-ups get on the line and begin the next run. In session 4 it is pertinent that you run the sprint times as hard as you can for the full duration of the time and stay strict on the jog/sprint transitions.

Sessions 1, 3 and 5 should begin with a Dynamic warm up consisting of:

- Jumping Jacks for 1 minute
- Lunge w/ Twist for 25 yards
- Knee Pull for 25 yards
- Quad Pull for 25 yards
- Toy Soldiers for 25 yards
- High Knees for 25 yards
- Butt Kicks for 25 yards

When you have completed each session perform the stretches that have been given to you. 3 sets of 30 second holds would be ideal if time permits. If time does not permit perform as many rounds from top to bottom as time allows.

I recommend running a timed 1.5 mile and performing a 1-minute test each of pushups and sit-ups before beginning the program. Record your data so you will know where you will need to improve and work the hardest. If you have a mental issue with running for long distances, I recommend running the test every few weeks depending on when you report for official testing.

Pre-Camp Workout							
DATE:		WEEK1		WEEK 2		WEEK 3	WEEK 4
SESSION 1		SETSEXREPS WT		SETSEXREPS WT		SETSEXREPS WT	SETSEXREPS WT
1A	Squats	3*10		3*10		3*10	3*10
1B	Pushups	3*10		3*10		3*10	3*10
2A	Pullups	3*10		3*10		3*10	3*10
2B	Supermans	3*15		3*15		3*15	3*15
3A	Walking Lunges	3*10/10		3*10/10		3*10/10	3*10/10
3B	Bench Press	3*10		3*10		3*10	3*10
4A	Bent Over Row	3*10		3*10		3*10	3*10
4B	Bicycle	3*15/15		3*15/15		3*15/15	3*15/15
5A	RDL	3*10		3*10		3*10	3*10
5B	Face Pulls	3*15		3*15		3*15	3*15
6A	3 Way Shoulder	3*10		3*10		3*10	3*10
6B	Side Plank Hip Drive	3*15/15		3*15/15		3*15/15	3*15/15
7A	Dips	3*10		3*10		3*10	3*10
7B	Curbs	3*10		3*10		3*10	3*10
7C	Crunches	3*30		3*30		3*30	3*30
SESSION 2		SETSEXREPS WT		SETSEXREPS WT		SETSEXREPS WT	SETSEXREPS WT
	Running Circuit 1						
SESSION 3		SETSEXREPS WT		SETSEXREPS WT		SETSEXREPS WT	SETSEXREPS WT
1A	Deadlift	3*10		3*10		3*10	3*10
1B	Decline Pushups	3*10		3*10		3*10	3*10
2A	Lat Pulldown	3*15		3*15		3*15	3*15
2B	Leg Drops	3*30		3*30		3*30	3*30
3A	DB Fly	3*10		3*10		3*10	3*10
3B	Reverse Fly	3*10		3*10		3*10	3*10
4A	Bulgarian Split Squat	3*10/10		3*10/10		3*10/10	3*10/10
4B	Side Plank	3*1 min		3*1 min		3*1 min	3*1 min
5A	Side Lunges	3*10/10		3*10/10		3*10/10	3*10/10
5B	Bent Over Laterals	3*15		3*15		3*15	3*15
6A	Infinity Shoulder	3*10		3*10		3*10	3*10
6B	Swimmers	3*15/15		3*15/15		3*15/15	3*15/15
7A	Tricep Pushdowns	3*15		3*15		3*15	3*15
7B	Cable Curls	3*15		3*15		3*15	3*15
7C	Front Plank Crossovers	3*15/15		3*15/15		3*15/15	3*15/15
SESSION 4		SETSEXREPS WT		SETSEXREPS WT		SETSEXREPS WT	SETSEXREPS WT
	Running Circuit 2						
SESSION 5		SETSEXREPS WT		SETSEXREPS WT		SETSEXREPS WT	SETSEXREPS WT
1A	Front Squat	3*10		3*10		3*10	3*10
1B	Band Pull Aparts	3*15		3*15		3*15	3*15
2A	Split Jumps	3*10/10		3*10/10		3*10/10	3*10/10
2B	Renegade Rows	3*10		3*10		3*10	3*10
3A	DB Bench	3*10		3*10		3*10	3*10
3B	1 Arm Row	3*10		3*10		3*10	3*10
4A	Y-T-W	3*7/7/7		3*7/7/7		3*7/7/7	3*7/7/7
4B	L-Overs	3*15/15		3*15/15		3*15/15	3*15/15
5A	Hamstring Curls	3*15		3*15		3*15	3*15
5B	Straight Arm Pulldown	3*10		3*10		3*10	3*10
6A	Incline Bench	3*10		3*10		3*10	3*10
6B	Cockroach	3*30		3*30		3*30	3*30
7A	Skull Crushers	3*10		3*10		3*10	3*10
7B	DB Alternating Curls	3*10		3*10		3*10	3*10

Running Circuit 1

Dynamic Warm up

4 Laps around basketball court

Lunge w/ Twist half court and back

Knee Pull half court and back

Quad Pull half court and back

Toy Soldiers half court and back

High Knees half court and back

Butt Kicks half court and back

(8) Full Court Warm Up Sprints with an 8 second break between each one

- 15 Pushups
- 20 Sit-ups

(6) Half Court Suicides with a 15 second break between each one

- 15 Pushups
- 20 Sit-ups

(5) Gassers with a 30 second break between each one

- 15 Pushups
- 20 Sit-ups

(5) Full Court X's with no break in between each one

- 15 Pushups
- 20 Sit-ups

(10) Half Court Side Shuffles with a 10 second break between each one

- 15 Pushups
- 20 Sit-ups

(5) Full Court Suicides with a 30 second break in between each one

- 15 Pushups
- 20 Sit-ups

Running Circuit 2

5 Minute Warm Up	5:00
30 Second Run	5:30
1 Minute Jog	6:30
45 Second Run	7:15
1 Minute Jog	8:15
1 Minute Run	9:15
1 Minute Jog	10:15
1:30 Minute Run	11:45
1 Minute Jog	12:45
1:30 Minute Run	14:15
1 Minute Jog	15:15
1 Minute Run	16:15
1 Minute Jog	17:15
45 Second Run	18:00
1 Minute Jog	19:00
30 Second Run	19:30
4:30 Minute Cool Down	25:00
Total Time	25:00 minutes

Pre-Camp Workout Exercise Description

- o Squats
 - o Start with feet slightly outside the shoulders. Depending on whatever is comfortable to you
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Bend at the hips driving your hips backwards as if you were going to sit in a chair while pushing your knees outward
 - o Keeping a neutral spine lower your hips to parallel (knee and hips in straight line)
 - o Keep the weight distributed between the ball of the foot and heel
 - o Drive upward squeezing the glutes at the top
 - o <https://www.youtube.com/watch?v=tvKlAGGp6Vo>
- o Pushups
 - o Start in a plank position with your hands slightly outside the shoulders
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Have your shoulder, elbow, and wrist in a straight line
 - o Keeping a neutral spine lower yourself to the ground bending at the elbow
 - o The desired distance from the ground should be a fist length
 - o Once the desired distance is acquired drive in a forceful manner pushing the floor away from you until you reach the starting position
 - o <https://www.youtube.com/watch?v=LBThZTve1QQ>
- o Pullups
 - o Start with a wide grip. Hands outside the shoulders
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Pull your body upwards taking the top of your chest to the bar
 - o Push your hips forward squeezing your glutes as you ascend upward
 - o Lower yourself to starting position
 - o https://www.youtube.com/watch?v=e-ggwbx_VUY

- o Supermans
 - o Lay in the prone position with arms and legs extended
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Flex your spine raising your arms and legs to the sky
 - o Hold for a two count then return to starting position
 - o <https://www.youtube.com/watch?v=g-44XaWkpZM>
- o Walking Lunges
 - o Start with feet together
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Take a big step forward
 - o Keeping your front foot flat on the ground, lower your back knee straight down stopping just before you touch the ground
 - o Drive upward and bring the back leg forward taking a step and repeating instructions
 - o <https://www.youtube.com/watch?v=TimaHw-KIY0>
- o Bench Press
 - o Lie on your back on a bench placing your feet flat on the floor
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Grab the bar with preferred grip distance
 - o Unrack the bar stacking the wrist, elbow, and shoulder
 - o Lower it to your xiphoid process (where your rib cage splits off)
 - o Keep your elbows at a 45-degree angle
 - o Once you have reached a fist length off the chest drive upward stacking the wrist, elbow, and shoulder
 - o <https://www.youtube.com/watch?v=WGKAkobQcXc>

- o Bent Over Row
 - o Stand with feet slightly outside your shoulders
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Lean over hinging at the hip and bending the knees
 - o You should have a neutral spine and be slightly above parallel
 - o With arms extended to the ground, bring your arms toward your body pulling the desired weight to your xiphoid process (where your rib cage splits off)
 - o Extend your arms back down towards the ground
 - o https://www.youtube.com/watch?v=kFxe9hy5_n0
- o Bicycle
 - o Lay on your back on the ground with knees bent at 90 degrees
 - o Hands should be placed on the side of your head
 - o Drive your left leg outward straightening it while crossing your left arm towards your right leg. Hold for 2 seconds then swap sides
 - o <https://www.youtube.com/watch?v=J1bEzomqRoo>
- o RDL
 - o Stand with your feet shoulder width apart
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Slightly bend the knee and keep your arms extended
 - o Hinge at the hip pushing the butt backwards and lowering the weight towards the ground
 - o Keep the weight close to the body and go to about mid shin
 - o <https://www.youtube.com/watch?v=rOmX9zQLnzk>
- o Face Pulls
 - o Put a band or cable about head high or slightly higher
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Grab the Band or Rope from underneath so that the band or rope is in your hand and your knuckles are pointed to the sky
 - o Your palms should be facing each other
 - o Pull towards your forehead by pulling from your elbows as if you were trying to touch your elbows behind your back
 - o https://www.youtube.com/watch?v=s_GnVrWxIQs

o 3 Way Shoulder

- o This is an exercise composed of 3 movements in 1. You will need dumbbells or plates. As soon as you finish the first you go straight into the second then third.
 - **Shoulder press-** Grab the weight and stack your elbows under your wrist
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Keep your arm at a 45-degree angle and press towards the sky and lower them to starting position
 - **Front Raise-** Stand with hand and weights by your side
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Keeping your arms straight raise your arms in front of you until your arm is parallel to the ground. Do not raise your wrist above your shoulder. Then lower the weight back by your side
 - **Lateral Raise-** Stand with hands and weights by your side
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Slightly bend your arms and raise them outward away from your body keeping the weight in front of your body. Do not raise wrist above shoulder. Then lower the weight back by your side

o <https://www.youtube.com/watch?v=Bx1uoiGrs6o>

o Side Plank Hip Drive

- o Begin in a side plank with your elbow stacked under your shoulder
- o Feet should be stacked on top of each other
- o Raise your hips off the ground creating a straight line from the shoulder to the hip to the ankle
- o Now drop your hip to where it almost touches the ground and go up and down
- o https://www.youtube.com/watch?v=Cphe2A_dras

- o Dips
 - o If a dip rack is available use it if not use a bench
 - Dip rack- Grab the handles and tuck your shoulder blades down and in.
 - Lower your body bending at the elbow and push your body back up to starting position
 - Bench- sit on a bench and place hands beside you on the edge of the bench and turn your hands slightly outward
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Keeping your butt close to the bench lower your body at the elbows and push your body back up to starting position
 - o <https://www.youtube.com/watch?v=R927fWG6qbM>
- o Curls
 - o Normal stance with arms extended by your side and palms facing away from your body
 - o Keep your elbows in front of your body and kind of bury them into your ribs
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Curl the weight upward to your chest and lower it back down to starting position
 - o <https://www.youtube.com/watch?v=SDZWcPZymY4>
- o Crunches
 - o Lie on your back with knees bent at 90-degree angle
 - o Place your hands on the side of head
 - o Lifting your shoulder blades off the ground move you elbows toward your knees
 - o They do not have to touch we just want to raise our shoulder blades off the ground
 - o <https://www.youtube.com/watch?v=KwMnvmr860>
- o Deadlift (I suggest getting someone who knows how to watch you, so you don't injure yourself on this one)
 - o Place bar on the ground and walk up to it. Bar should be placed over the ball of the foot. Stance should be about shoulder width apart turn your toes slightly outward
 - o Bend over and grip the barbell with both hands at shoulder width
 - o Sit with your hips bending your knees and keep the bar close to your shins
 - o With a neutral spine (flat back), bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Pick the bar off the ground by driving off the ground into a standing position.

- o Make sure your hips and shoulders lift together meaning they to the top at about the same time. Your legs should not be locked out and upper body still facing the ground. Legs hip and shoulders should meet in a straight line at the same time.
 - o Squeeze your butt locking the hips
 - o Lower the weight back to the ground by sitting with your hips placing it back to the ground
 - o <https://www.nsca.com/education/videos/exercise-technique-deadlift/>
- o Decline Pushups
 - o Place your feet on an elevated surface. A chair or a bench. Start in a plank position with your hands slightly outside the shoulders
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Have your shoulder, elbow, and wrist in a straight line
 - o Keeping a neutral spine lower yourself to the ground bending at the elbow
 - o The desired distance from the ground should be a fist length
 - o Once the desired distance is acquired drive in a forceful manner pushing the floor away from you until you reach the starting position
 - o <https://www.youtube.com/watch?v=L-efWWxlZso>
- o Lat Pulldown
 - o Using the long bar attachment on the cable crossover machine
 - o Grab the bar with a wide grip and sit down
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Pulling from your elbows bring the weight to the top of your chest while keeping your wrist stacked over your elbow
 - o Once you reach the destination resist the bar back up while extending your arms
 - o <https://www.youtube.com/watch?v=2doNt47q41Q>
- o Leg Drops
 - o Lie flat on your back placing your hands under your butt
 - o Raise your legs up to starting position where the bottom of your foot is facing the sky
 - o Keep your lower back flat on the ground and begin to lower your straight legs to the ground
 - o Lower your legs until you cannot keep your lower back flat on the ground and then return to starting position with the bottom of your foot facing the sky
 - o <https://www.youtube.com/watch?v=xgTkDn5qisg>

o DB Fly

- o Grab the desired weight of dumbbells and lie on your back on a bench placing your feet flat on the floor
- o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
- o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
- o With your arms extended towards the sky and palms facing each other slightly bend your elbows
- o Lower your arms to the ground pulling them away from each other as if you were opening for a hug
- o Don't let the elbows drop below the shoulder
- o Once elbows are even with shoulder proceed to "hug" someone carrying the weights back up to starting position
- o <https://www.youtube.com/watch?v=gdwilbI130Y>

o Reverse Fly

- o Grab the desired weight of dumbbell or plates
- o Stand with feet slightly outside your shoulders
- o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
- o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
- o Lean over hinging at the hip and bending the knees
- o You should have a neutral spine and be slightly above parallel
- o Bend slightly at the elbows keeping palms facing each other and proceed to pull your arms away from each other as if you were opening up for a hug. Bringing the elbows toward each other. Once the range of motion is obtained resist the movement back to starting position
- o <https://www.youtube.com/watch?v=WsM5I91D5pA>

o Bulgarian Split Squat

- o Back up to a box or bench or chair. Take one big step away from it
- o Reach back with one leg and place your foot in the middle of the bench/box/chair
- o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
- o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
- o Hinge at the hip bending at the knee lower your hips to the bench/box/chair
- o It should look like a lunge but with one leg back on the bench/box/chair
- o Keep your chest up and do not let your knee push forward. If it tries to go forward simply shift your hips back toward the bench/box/chair
- o Once your knee and hip are in line drive through the heel standing back upright
- o <https://www.youtube.com/watch?v=9xMLyUTMLH8>

- o Side Plank
 - o Begin with your elbow stacked under your shoulder
 - o Feet should be stacked on top of each other
 - o Raise your hips off the ground creating a straight line from the shoulder to the hip to the ankle
 - o Hold for the desired amount of time
 - o <https://www.youtube.com/watch?v=phZKlKS5ZX8>
- o Side Lunges
 - o Stand with feet together
 - o Step out to the side spreading your feet apart
 - o Push your hips back which is going to cause you to lean forward
 - o Keeping a neutral spine lean over to the leg you stepped with which is going to cause your back leg to straighten
 - o Keep both feet flat on the ground. When your hip and knee is in line or your flexibility has reached its max. Push off the ground with the lead leg pushing back to starting position
 - o <https://www.youtube.com/watch?v=FUX6Pz8vV0s>
- o Bent Over Laterals
 - o Grab the desired weight of dumbbell or plates
 - o Stand with feet slightly outside your shoulders
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Lean over hinging at the hip and bending the knees
 - o You should have a neutral spine and be slightly above parallel
 - o Bend slightly at the elbows and turn your palms to your body (pronated)
 - o Proceed to pull your arms away from each other as if you were opening up for a hug. Bringing the elbows toward each other. Once the range of motion is obtained resist the movement back to starting position
 - o <https://www.youtube.com/watch?v=3hLBiQm5wNI>
- o Infinity Shoulder
 - o Grab a plate
 - o Pushing the plate away from your body with your wrist elbow and shoulder in a straight line
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Proceed to draw an infinity sign which is nothing more than a sideways 8
 - o <https://www.youtube.com/watch?v=ITPZpz-2Z14>

- o Swimmers
 - o Lie in the prone position on the ground. (on your stomach)
 - o Extend your arms and legs
 - o Raise your opposite arm and opposite leg toward the sky (left arm and right leg)
 - o These are like supermans but you're alternating
 - o Hold for a 2 count before swapping arms and leg
 - o <https://www.youtube.com/watch?v=LnoridBzqHM>
- o Tricep Pushdowns
 - o You will need a crossover cable machine for this one
 - o Hook up the short bar or v bar or rope higher than your head
 - o Grab the attachment and bring your elbows to your side
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Keeping your elbows by your side extend your arms pushing your hands toward the ground
 - o Resist the movement back to the starting position
 - o <https://www.youtube.com/watch?v=1v1Z36PhjsE>
- o Cable Curls
 - o You will need a cable crossover machine for this one
 - o Start with a normal stance grabbing the short bar or ez bar attachment with arms extended by your side and palms facing away from your body
 - o Keep your elbows in front of your body and kind of bury them into your ribs
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Curl the weight upward to your chest and lower it resisting the weight back down to starting position
 - o <https://www.youtube.com/watch?v=ty6qX2mp2Lg>
- o Front Plank Crossovers
 - o Begin in a normal plank position with arms extended
 - o Bring you opposite knee under and across your body to the opposite elbow
 - o You are going to twist your waist while you drive the opposite leg across
 - o <https://www.youtube.com/watch?v=eSMTRTAIXY4>

- o Front Squat
 - o Set the bar at the height of your collarbone
 - o Step up to the bar and raise your arms out in front of you, this will create a crease in your shoulders that the bar will sit in
 - o Take your right-hand place it on the front of your left shoulder and your left hand on the front of your right shoulder
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Keeping a neutral spine and your elbows up lift the bar off the rack and cautiously step backward.
 - o Stance should be hip to shoulder width apart with toes slightly outward.
 - o Now you are going to squat keeping your chest up and heels on the ground
 - o Keep your elbows up as you lower and raise the weight
 - o <https://www.youtube.com/watch?v=1KuBXM2z9kE>
- o Band Pull Aparts
 - o Get a band and grab it with a pronated grip (palms facing the ground)
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Extend your arm where they are straight out in front of you with wrist, elbow and shoulder in a straight line
 - o Make a very slight bend in the arm and pull the band apart taking your hands away from each other
 - o Resist the band coming back to starting position
 - o <https://www.youtube.com/watch?v=ElTeCb6HVDM>
- o Split Jumps
 - o This is an explosive movement
 - o Start in a lunge position and jump as high and straight up as you can switching legs in the air. (i.e. if you have your left forward when you jump you will land with your right foot forward)
 - o Don't worry so much about speed here but staying vertical and in control of your body
 - o <https://www.youtube.com/watch?v=G93T5c40S4w>

- o Renegade Rows
 - o Start in a pushups position holding onto to dumbbells with your legs a little outside shoulder width
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Perform a pushup while holding the dumbbells
 - o When your arms are locked out on the pushups shift your weight to one arm (be careful and don't let the dumbbell roll out from under you) and row the opposite arm bringing your elbow by your side
 - o Resist the weight back to the ground and row the opposite arm
 - o Return to starting position
 - o <https://www.youtube.com/watch?v=0W3MrISx8r4>
- o DB Bench
 - o Grab the desired weight of dumbbells and lie on your back on a bench placing your feet flat on the floor
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Now you are going to bench press but with dumbbells
 - o When lowering the weight bring the elbows to about a 45-degree angle
 - o Lower to a fist length off the chest and press back towards the sky
 - o <https://www.youtube.com/watch?v=BCG0Oa8Rhtg>
- o 1 Arm Row
 - o Grab your desired weight whether kettlebell, plate, or dumbbell in one hand
 - o Lean over to about a 45-degree angle and brace on a rack or an inclined bench with your empty hand
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Allow your hand with the weight to drop down towards the ground while maintaining a neutral spine
 - o Pull the weight toward your body by bringing your elbow by your side
 - o Resist the weight back down to starting position
 - o <https://www.youtube.com/watch?v=fQe8A2eJHps>

o Y-T-W

- o You will need a weight in each hand and need it to not be heavy
- o Bend your knees and lean over to about a 45-degree angle
- o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
- o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
- o **Y-** With your hands by your side and palms facing each other keep your arms extended and raise them in front of your body over your head making a Y then resist the movement back to starting position
- o **T-** Now with your arms hanging in a neutral position towards the ground turn your thumbs outward, your pinkies should be touching each other. Pull your arms apart carrying your thumbs to the sky creating a T. Resist the weight back down to starting position
- o **W-** Bend your arms at the elbow to a 90-degree angle with palms facing each other. Keeping the 90-degree angle carry your arms apart creating a W. it should look like your showing the ground your biceps but with your palms facing the ground
- o https://www.youtube.com/watch?v=OcWuMa6Rt_g

o L-Overs

- o Lie on your back with legs raised straight up and heels towards the sky
- o Place your arms straight out by your side making a T
- o Rotating your lower body dropping your legs to one side and then bring them back up and drop to the other side. This should look like your drawing a rainbow
- o <https://www.youtube.com/watch?v=POM5TqCQ7k8>

o Hamstring Curls

- o You will need a hamstring curl machine for this one
- o You can follow the instructions on the machine or simply lie or sit or stand whichever is at your gym
- o Curl your heels towards your butt and resist the weight back to starting position

o Straight Arm Pulldown

- o You need a cable crossover machine for this one
- o Hook up a flat bar head height or above and grab the bar with your palms facing the ground (pronated)
- o Slightly bend your knees and hinge at the hip pushing your back backwards
- o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
- o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
- o With your arms straight pull the bar toward your thighs and resist the weight back to starting position
- o <https://www.youtube.com/watch?v=EzGGEOLBaQI>

- o Incline Bench
 - o Lie on the inclined bench placing your feet flat on the floor
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Grab the bar with preferred grip distance
 - o Unrack the bar stacking the wrist, elbow, and shoulder
 - o Lower it to the top of your chest
 - o Keep your elbows at a 45-degree angle
 - o Press it upwards back to starting position
 - o <https://www.youtube.com/watch?v=0JDHOzizGOQ>
- o Cockroach
 - o Lie on your back with legs raised straight up and heels towards the sky
 - o With arms extended raise your shoulder blades off the ground reaching towards your toes then resist your upper body back to the ground
 - o <https://www.youtube.com/watch?v=BlF9NDz-osw>
- o Skull Crushers
 - o Grab an EZ bar or straight bar
 - o Lie on your back and hold your arms extended away from your body
 - o Bend at the elbow resisting the weight to your forehead and then extend your arms returning to start position
 - o <https://www.youtube.com/watch?v=li7WFG8hwP8>
- o DB Alternating Curls
 - o Normal stance with arms extended by your side holding dumbbells with palms facing away from your body
 - o Keep your elbows in front of your body and kind of bury them into your ribs
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Curl the weight in one arm upward to your chest and lower it back down resisting the weight to starting position then alternate to the other arm
 - o <https://www.youtube.com/watch?v=jEas9jUV1aw>

Dynamic Warm Up

- Lunge w/ Twist
 - Lunge forward and twist the upper torso to the side you used to lunge forward
- Knee Pull
 - Take a step forward grabbing the opposite leg at the knee and pulling it upward toward your chest
 - As you pull the knee to the chest, flex the foot on the ground standing on your tip toes
- Quad Pull
 - Take a step forward grabbing the opposite leg at the ankle and pulling it upward toward your butt
 - As you pull the ankle to the butt, flex the foot on the ground standing on your tip toes
- Toy Soldiers
 - Take a step forward and extend your arms straight out in front of you with palms facing the ground
 - Keeping your opposite leg straight
 - Kick it forward touching your toe to your palm
- High Knees
 - Jog forward driving your knees to your chest
- Butt Kicks
 - Jog forward while putting emphasis on putting your heel on your butt

Running Circuit 1 Description

- Full Court Warm Up Sprints
 - Start on one side of the court and run to the other
 - Start out with a jog and with each sprint increase your speed until you are full speed on your last repetition
- Half Court Suicides
 - Start on one side of the court and sprint to the free throw line bend down and touch it
 - Once you have touched the line sprint back to the starting line and bend down and touch it
 - Once you have touched the line sprint to the half court line and bend down and touch it
 - Once you have touched the line sprint back running through the starting line
 - It is important to swap the plant leg each time you plant and touch a line to avoid overuse injuries
- Gassers
 - Start on the side of the court facing the other side of the court
 - You are going to sprint to the other side of the court and bend down and touch the line
 - Once you have touched the line sprint back to the starting line and bend down and touch it
 - Once you have touched the starting line sprint back across the court and touch the line
 - Once you have touched the line sprint back to the starting line running all the way thorough it
 - It is important to swap the plant leg each time you plant and touch a line to avoid overuse injuries
- Full Court X's
 - Start in the corner of the court
 - Sprint diagonal to the far corner of the court
 - Once you reach the corner jog the baseline to the other corner on the same side of the court
 - Once you reach that corner Sprint diagonal to far corner of the court
 - Once you reach the corner jog the baseline to the other corner on the same side of the court
 - You now have completed the X. It should look like the X when they get a wrong answer on Family Feud
 - This is continuous motion until the desired number of reps are met
- Half Court Side Shuffles
 - Stand on the baseline with your side to the court
 - Squat down in an athletic position and shuffle to half court touching the line

- o Once you have touched the line stay facing the same way and shuffle back to the starting line
- Full Court Suicides
 - o Start on one side of the court and sprint to the free throw line bend down and touch it
 - o Once you have touched the line sprint back to the starting line and bend down and touch it
 - o Once you have touched the line sprint to the half court line and bend down and touch it
 - o Once you have touched the line sprint back to the starting line and bend down and touch it
 - o Once you have touched the starting line sprint to the free throw line on the other side of the court and reach down and touch it
 - o Once you have touched the line sprint back to the starting line and bend down and touch it
 - o Once you have touched the starting line sprint to the baseline on the other side of the court and bend down and touch it
 - o Once you have touched the line sprint back running through the starting line
 - o It is important to swap the plant leg each time you plant and touch a line to avoid overuse injuries

General Workout Description

The general workout is designed to be performed in a superset format. While you are resting from 1A perform 1B. Complete the 3 sets of 1A and 1B before you move on to the next number of A and B and so on.

Each session should begin with a Dynamic warm up consisting of:

Jumping Jacks for 1 minute
Lunge w/ Twist for 25 yards
Knee Pull for 25 yards
Quad Pull for 25 yards
Toy Soldiers for 25 yards
High Knees for 25 yards
Butt Kicks for 25 yards

Three times a week you should perform 20 to 30 minutes of aerobic activity whether it be walking, rowing, jogging, cycling, or swimming.

When you have completed each session perform the stretches that have been given to you. 3 sets of 30 second holds would be ideal if time permits. If time does not permit perform as many rounds from top to bottom as time allows.

General Fitness Workout									
	DATE:	WEEK1		WEEK 2		WEEK 3		WEEK 4	
	SESSION 1 (Legs/Abs)	SETXREPS	WT	SETXREPS	WT	SETXREPS	WT	SETXREPS	WT
1A	Squats	3*10		3*10		3*10		3*10	
1B	Side Plank	3*1 min		3*1 min		3*1 min		3*1 min	
2A	Lunges	3*10/10		3*10/10		3*10/10		3*10/10	
2B	Sit ups	3*25		3*25		3*25		3*25	
3A	Side Lunges	3*10		3*10		3*10		3*10	
3B	Supermans	3*15		3*15		3*15		3*15	
4A	RDL	3*10		3*10		3*10		3*10	
4B	Leg Drops	3*10		3*10		3*10		3*10	
	SESSION 2 (Back/Bi/Abs)	SETXREPS	WT	SETXREPS	WT	SETXREPS	WT	SETXREPS	WT
1A	Pullups	3*10		3*10		3*10		3*10	
1B	Shrugs	3*10		3*10		3*10		3*10	
2A	Reverse Fly	3*10		3*10		3*10		3*10	
2B	Straight Arm Pulldown	3*15		3*15		3*15		3*15	
3A	Hammer Curls	3*15/15		3*15/15		3*15/15		3*15/15	
3B	Bicycle	3*15/15		3*15/15		3*15/15		3*15/15	
4A	Bent Over Row	3*10		3*10		3*10		3*10	
4B	Reverse Curls	3*10		3*10		3*10		3*10	
5A	Cable Pull Aparts	3*15		3*15		3*15		3*15	
5B	Iso Curls	3*15/15		3*15/15		3*15/15		3*15/15	
	SESSION 3 (Chest/Shoulder/Tri/Abs)	SETXREPS	WT	SETXREPS	WT	SETXREPS	WT	SETXREPS	WT
1A	Pushups	3*10		3*10		3*10		3*10	
1B	Infinity Shoulder	3*10		3*10		3*10		3*10	
2A	Bench Press	3*10		3*10		3*10		3*10	
2B	Russian Twist	3*15/15		3*15/15		3*15/15		3*15/15	
3A	Low Cable Fly	3*10		3*10		3*10		3*10	
3B	Shoulder Press	3*10		3*10		3*10		3*10	
4A	Dips	3*10		3*10		3*10		3*10	
4B	Bent Over Laterals	3*15		3*15		3*15		3*15	
5A	Tricep Kickbacks	3*15/15		3*15/15		3*15/15		3*15/15	
5B	V-Ups	3*30		3*30		3*30		3*30	
	SESSION 4 (Legs/Back)	SETXREPS	WT	SETXREPS	WT	SETXREPS	WT	SETXREPS	WT
1A	Deadlift	3*10		1*10 / 1*5 / 1*3		3*5		1*10 / 1*5 / 1*3	
1B	Side Bends	3*15/15		3*15/15		3*15/15		3*15/15	
2A	Bulgarian Split Squat	3*10/10		3*10/10		3*10/10		3*10/10	
2B	Lat Pulldown	3*15		3*15		3*15		3*15	
3A	Reverse Crossover Lunges	3*10/10		3*10/10		3*10/10		3*10/10	
3B	T-Bar Row	3*10		3*10		3*10		3*10	
4A	1 Leg Glute Bridge	3*15/15		3*15/15		3*15/15		3*15/15	
4B	Face Pulls	3*15		3*15		3*15		3*15	
	SESSION 5 (Chest/Shoulder/Abs)	SETXREPS	WT	SETXREPS	WT	SETXREPS	WT	SETXREPS	WT
1A	Decline Pushups	3*10		3*10		3*10		3*10	
1B	Front Raise Drive The Car	3*10		3*10		3*10		3*10	
2A	DB Bench	3*10		3*10		3*10		3*10	
2B	Lateral Raises	3*15		3*15		3*15		3*15	
3A	DB Fly	3*10		3*10		3*10		3*10	
3B	Arnold Press	3*10		3*10		3*10		3*10	
4A	Star Plank	3*1 min		3*1 min		3*1 min		3*1 min	
4B	Y-T-W	3*7/7/7		3*7/7/7		3*7/7/7		3*7/7/7	
5A	Plank Walk	3*15/15		3*15/15		3*15/15		3*15/15	
5B	X-Sit ups	3*15/15		3*15/15		3*15/15		3*15/15	

General Fitness Workout

Exercise Description

- Squats
 - Start with feet slightly outside the shoulders. Depending on whatever is comfortable to you
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Bend at the hips driving your hips backwards as if you were going to sit in a chair while pushing your knees outward
 - Keeping a neutral spine lower your hips to parallel (knee and hips in straight line)
 - Keep the weight distributed between the ball of the foot and heel
 - Drive upward squeezing the glutes at the top
 - <https://www.youtube.com/watch?v=tvKlAGGp6Vo>
- Side Plank
 - Begin with your elbow stacked under your shoulder
 - Feet should be stacked on top of each other
 - Raise your hips off the ground creating a straight line from the shoulder to the hip to the ankle
 - Hold for the desired amount of time
 - <https://www.youtube.com/watch?v=phZKlKS5ZX8>
- Lunges
 - Start with feet together
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Take a big step forward
 - Keeping your front foot flat on the ground, lower your back knee straight down stopping just before you touch the ground
 - Drive upward pushing back to starting position
 - <https://www.youtube.com/watch?v=Wb8Yr3Nx7dE>

- Sit-ups
 - Lie on your back with knees bent and feet on the floor
 - Interlock your fingers behind your head
 - Sit-up bringing your elbows to your knees and lower yourself back down to the ground
 - <https://www.youtube.com/watch?v=DvAdkXuoPLA>
- Side Lunges
 - Stand with feet together
 - Step out to the side spreading your feet apart
 - Push your hips back which is going to cause you to lean forward
 - Keeping a neutral spine lean over to the leg you stepped with which is going to cause your back leg to straighten
 - Keep both feet flat on the ground. When your hip and knee is in line or your flexibility has reached its max. Push off the ground with the lead leg pushing back to starting position
 - <https://www.youtube.com/watch?v=FUX6Pz8vV0s>
- Supermans
 - Lay in the prone position with arms and legs extended
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Flex your spine raising your arms and legs to the sky
 - Hold for a two count then return to starting position
 - <https://www.youtube.com/watch?v=g-44XaWkpZM>
- RDL
 - Stand with your feet shoulder width apart
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Slightly bend the knee and keep your arms extended
 - Hinge at the hip pushing the butt backwards and lowering the weight towards the ground
 - Keep the weight close to the body and go to about mid shin
 - <https://www.youtube.com/watch?v=rOmX9zQLnzk>
- Leg Drops
 - Lie flat on your back placing your hands under your butt
 - Raise your legs up to starting position where the bottom of your foot is facing the sky
 - Keep your lower back flat on the ground and begin to lower your straight legs to the ground
 - Lower your legs until you cannot keep your lower back flat on the ground and then return to starting position with the bottom of your foot facing the sky
 - <https://www.youtube.com/watch?v=xgTkDn5qisg>

- Pullups
 - o Start with a wide grip. Hands outside the shoulders.
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Pull your body upwards taking the top of your chest to the bar
 - o Push your hips forward squeezing your glutes as you ascend upward
 - o Lower yourself to starting position
 - o https://www.youtube.com/watch?v=e-ggwbx_VUY
- Shrugs
 - o Grab a loaded bar with your palms facing your body (pronated)
 - o With arms extended and bar resting on your legs
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Shrug your shoulders as if you were saying I don't know while keeping your shoulder blades tucked down and in
 - o Resist the weight back to starting position
 - o <https://www.youtube.com/watch?v=94Cr5NoPwYk>
- Reverse Fly
 - o Grab the desired weight of dumbbell or plates
 - o Stand with feet slightly outside your shoulders
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Lean over hinging at the hip and bending the knees
 - o You should have a neutral spine and be slightly above parallel
 - o Bend slightly at the elbows keeping palms facing each other and proceed to pull your arms away from each other as if you were opening for a hug. Bringing the elbows toward each other. Once the range of motion is obtained resist the movement back to starting position
 - o <https://www.youtube.com/watch?v=WsM5I91D5pA>

- Straight Arm Pulldown
 - You need a cable crossover machine for this one
 - Hook up a flat bar head height or above and grab the bar with your palms facing the ground (pronated)
 - Slightly bend your knees and hinge at the hip pushing your back backwards
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - With your arms straight pull the bar toward your thighs and resist the weight back to starting position
 - <https://www.youtube.com/watch?v=EzGGEOLBaQI>
- Hammer Curls
 - Grab dumbbells with a neutral stance and your arms by your side with your palms facing each other
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Keep your elbows in front of your body by burying your elbows in your ribs
 - Keeping the neutral grip on the dumbbells with palms facing each other bring the dumbbell to your shoulder and resist the weight back to starting position
 - <https://www.youtube.com/watch?v=ODKb0eO4ktQ>
- Bicycle
 - Lay on your back on the ground with knees bent at 90 degrees
 - Hands should be placed on the side of your head
 - Drive your left leg outward straightening it while crossing your left arm towards your right leg. Hold for 2 seconds then swap sides
 - <https://www.youtube.com/watch?v=J1bEzomqRoo>
- Bent Over Row
 - Stand with feet slightly outside your shoulders
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Lean over hinging at the hip and bending the knees
 - You should have a neutral spine and be slightly above parallel
 - With arms extended to the ground, bring your arms toward your body pulling the desired weight to your xiphoid process (where your rib cage splits off)
 - Extend your arms back down towards the ground
 - https://www.youtube.com/watch?v=kFxe9hy5_n0

- Reverse Curls
 - Grab a straight bar, EZ bar or Dumbbells with a pronated grip (palms facing your body)
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Keep your elbows in front of your body by burying your elbows into your ribs
 - Keeping the pronated grip raise the weight towards your shoulders and resist the weight back down to starting position
 - <https://www.youtube.com/watch?v=Af9eTdFCNfY>
- Cable Pull Aparts
 - Set up your cable crossover machine where you have a cable on each side of you at head height or slightly above
 - Grab the cable on the left side with your right hand and grab the cable on the right side with your left hand
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Slightly bend your elbows and begin to pull the cables apart. You will create an X with the cables and the middle of the X should hit you on the tip of your nose. This ensures you're pulling at the same height with both arms
 - Resist the cables back to starting position
 - <https://www.youtube.com/watch?v=fKALay-YXUs>
- Iso Curls
 - Grab your desired weight in a dumbbell with one hand
 - Sit down on a bench and spread your legs
 - With weight in hand place your elbow on your inner thigh
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Curl the weight to your chest and resist it back down to starting position
 - <https://www.youtube.com/watch?v=hIXjwvax8iY>

- Pushups
 - Start in a plank position with your hands slightly outside the shoulders
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Have your shoulder, elbow, and wrist in a straight line
 - Keeping a neutral spine lower yourself to the ground bending at the elbow
 - The desired distance from the ground should be a fist length
 - Once the desired distance is acquired drive in a forceful manner pushing the floor away from you until you reach the starting position
 - <https://www.youtube.com/watch?v=LBThZTve1QQ>
- Infinity Shoulder
 - Grab a plate
 - Push the plate away from your body with your wrist elbow and shoulder in a straight line
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Proceed to draw an infinity sign which is nothing more than a sideways 8
 - <https://www.youtube.com/watch?v=ITPZpz-2Z14>
- Bench Press
 - Lie on your back on a bench placing your feet flat on the floor
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Grab the bar with preferred grip distance
 - Unrack the bar stacking the wrist, elbow, and shoulder
 - Lower it to your xiphoid process (where your rib cage splits off)
 - Keep your elbows at a 45-degree angle
 - Once you have reached a fist length off the chest drive upward stacking the wrist, elbow, and shoulder
 - <https://www.youtube.com/watch?v=WGKAkobQcXc>
- Russian Twist
 - Sit on the ground on your back
 - Lean back and raise your feet off the ground while bending your knees
 - With arms extending twist your upper body left and right
 - <https://www.youtube.com/watch?v=TU6lR5TvEQw>

- Low Cable Fly
 - You will need a cable crossover machine for this one
 - While standing in the middle with a cable on each side adjust the handles to a knee-high placement
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Slightly bend your elbows and raise your arms in front of your body while carrying your hands away from your body
 - Carry the cables to your head height squeezing your chest
 - Resist the weight back down to starting position
 - <https://www.youtube.com/watch?v=6tnFPdamjOo>
- Shoulder Press
 - Grab the weight and stack your elbows under your wrist
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Keep your arm at a 45-degree angle and press towards the sky and lower them to starting position
 - https://www.youtube.com/watch?v=IWZ_D8JLGEY
- Dips
 - If a dip rack is available use it if not use a bench
 - Dip rack- Grab the handles and tuck your shoulder blades down and in.
 - Lower your body bending at the elbow and push your body back up to starting position
 - Bench- sit on a bench and place hands beside you on the edge of the bench and turn your hands slightly outward
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Keeping your butt close to the bench lower your body at the elbows and push your body back up to starting position
 - <https://www.youtube.com/watch?v=R927fWG6qbM>

- Bent Over Laterals
 - o Grab the desired weight of dumbbell or plates
 - o Stand with feet slightly outside your shoulders
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Lean over hinging at the hip and bending the knees
 - o You should have a neutral spine and be slightly above parallel
 - o Bend slightly at the elbows and turn your palms to your body (pronated)
 - o Proceed to pull your arms away from each other as if you were opening for a hug. Bringing the elbows toward each other. Once the range of motion is obtained resist the movement back to starting position
 - o <https://www.youtube.com/watch?v=3hLBiQm5wNI>
- Tricep Kickbacks
 - o Grab your desired weight whether kettlebell, plate, or dumbbell in one hand
 - o Lean over to about a 45-degree angle and brace on a rack or an inclined bench with your empty hand
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Allow your hand with the weight to drop down towards the ground while maintaining a neutral spine
 - o Pull the weight toward your body by bringing your elbow by your side
 - o Keep your elbow by your side and extend your arm taking your hand toward the sky
 - o Resist the weight back down to the position with your elbow by your side and repeat
 - o <https://www.youtube.com/watch?v=Y-Ak1xdrQm4>
- V-Ups
 - o Lie on the floor with your back
 - o With arms and legs extended raise your upper body and lower body so they meet in the middle of your body
 - o From the side you should make a V shape
 - o Resist your body back to starting position
 - o <https://www.youtube.com/watch?v=3ZEIiIGWVA8>

- Deadlift (I suggest getting someone who knows how to watch you, so you don't injure yourself on this one)
 - Place bar on the ground and walk up to it. Bar should be placed over the ball of the foot. Stance should be about shoulder width apart turn your toes slightly outward
 - Bend over and grip the barbell with both hands at shoulder width
 - Sit with your hips bending your knees and keep the bar close to your shins
 - With a neutral spine (flat back), bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Pick the bar off the ground by driving off the ground into a standing position.
 - Make sure your hips and shoulders lift together meaning they to the top at about the same time. Your legs should not be locked out and upper body still facing the ground. Legs hip and shoulders should meet in a straight line at the same time.
 - Squeeze your butt locking the hips
 - Lower the weight back to the ground by sitting with your hips placing it back to the ground
 - <https://www.nsca.com/education/videos/exercise-technique-deadlift/>
- Side Bends
 - Feet should be close together with a weight in one hand by your side
 - Tuck your shoulder blades down and in and bring your belly button to your spine
 - Lean to the side that the weight is on taking it toward the ground (as if you were a teapot and pouring out the tea)
 - Return to starting position
 - <https://www.youtube.com/watch?v=Q3b5rwc6f9M>
- Bulgarian Split Squat
 - Back up to a box or bench or chair. Take one big step away from it
 - Reach back with one leg and place your foot in the middle of the bench/box/chair
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Hinge at the hip bending at the knee lower your hips to the bench/box/chair
 - It should look like a lunge but with one leg back on the bench/box/chair
 - Keep your chest up and do not let your knee push forward. If it tries to go forward simply shift your hips back toward the bench/box/chair
 - Once your knee and hip are in line drive through the heel standing back upright
 - <https://www.youtube.com/watch?v=9xMLyUTMLH8>

- Lat Pulldown
 - Using the long bar attachment on the cable crossover machine
 - Grab the bar with a wide grip and sit down
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Pulling from your elbows bring the weight to the top of your chest while keeping your wrist stacked over your elbow
 - Once you reach the destination resist the bar back up while extending your arms
 - <https://www.youtube.com/watch?v=2doNt47q41Q>
- Reverse Crossover Lunges
 - Stand with feet beside each other
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Standing on one leg swing the opposite leg behind and across your other leg (like a curtsy)
 - Do not let your shoulders twist
 - <https://www.youtube.com/watch?v=C2vtJozyEnM>
- T-Bar Row
 - Set up your T-bar using a landmine attachment or simply placing a bar in the corner (your gym may also have a machine for this)
 - Stand with feet slightly outside your shoulders
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Lean over hinging at the hip and bending the knees
 - You should have a neutral spine and be slightly above parallel
 - With hands stacked gripping the bar below the weight pull the bar towards your chest while bringing your elbows by your side
 - Resist the weight back down to starting position
 - https://www.youtube.com/watch?v=e8YF8Z_N0-4
- 1 Leg Glute Bridge
 - Lay on your back on the ground
 - Bend 1 leg bringing your heel toward butt
 - Raise the opposite leg straight to the sky
 - Drive through the heel that is on the ground pushing your hips toward the sky and creating a straight line from your shoulder, hip and knee
 - Resist your body back to starting position
 - <https://www.youtube.com/watch?v=-rUU3W1QGq0>

- Face Pulls
 - Put a band or cable about head high or slightly higher
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Grab the Band or Rope from underneath so that the band or rope is in your hand and your knuckles are pointed to the sky
 - Your palms should be facing each other
 - Pull towards your forehead by pulling from your elbows as if you were trying to touch your elbows behind your back
 - https://www.youtube.com/watch?v=s_GnVrWxIQs
- Decline Pushups
 - Place your feet on an elevated surface. A chair or a bench. Start in a plank position with your hands slightly outside the shoulders
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Have your shoulder, elbow, and wrist in a straight line
 - Keeping a neutral spine lower yourself to the ground bending at the elbow
 - The desired distance from the ground should be a fist length
 - Once the desired distance is acquired drive in a forceful manner pushing the floor away from you until you reach the starting position
 - <https://www.youtube.com/watch?v=L-efWWxlZso>
- Front Raise Drive the Car
 - Grab your desired weight and take a neutral stance
 - Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - Raise the plate away from your body performing a front raise until your wrist, elbow and shoulder are in a straight line. Now turn the plate as if you were driving a car turning it to the left and then to the right and come back to center
 - Lower the plate resisting back to starting position
 - <https://www.youtube.com/watch?v=iu5ZOix61cQ>

- DB Bench
 - o Grab the desired weight of dumbbells and lie on your back on a bench placing your feet flat on the floor
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Now you are going to bench press but with dumbbells
 - o When lowering the weight bring the elbows to about a 45-degree angle
 - o Lower to a fist length off the chest and press back towards the sky
 - o <https://www.youtube.com/watch?v=BCG0Oa8Rhtg>
- Lateral Raises
 - o Stand with hands and weights by your side
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Slightly bend your arms and raise them outward away from your body keeping the weight in front of your body. Do not raise wrist above shoulder. Then lower the weight back by your side
 - o <https://www.youtube.com/watch?v=OBgCvyi0obI>
- DB Fly
 - o Grab the desired weight of dumbbells and lie on your back on a bench placing your feet flat on the floor
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o With your arms extended towards the sky and palms facing each other slightly bend your elbows
 - o Lower your arms to the ground pulling them away from each other as if you were opening for a hug
 - o Don't let the elbows drop below the shoulder
 - o Once elbows are even with shoulder proceed to "hug" someone carrying the weights back up to starting position
 - o <https://www.youtube.com/watch?v=gdwilbI130Y>

- Arnold Press
 - o Sit with dumbbells in hand
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o Bend your elbows and rest the dumbbells on your shoulder with your palms facing your body
 - o Controlling the weight begin to press upward rotating the wrist on the way up to your destination of your arms extended and your palms facing away from you
 - o Hold for 1 to 2 seconds then lower the weight back to starting position by rotating the wrist on the way down so you finish with palms facing your body again
 - o Keep your elbows stacked under your wrists
 - o <https://www.youtube.com/watch?v=15jupmNZHx0>
- Star Plank
 - o Start in a pushup position and walk your arms and feet out as much as you can without falling creating a star appearance (like a big X)
 - o Hold that position for the desired amount of time
 - o Keep your hips up and don't let them sag keep a neutral spine
 - o <https://www.youtube.com/watch?v=rlTgi2au8Fk>
- Y-T-W
 - o You will need a weight in each hand and need it to not be heavy
 - o Bend your knees and lean over to about a 45-degree angle
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o **Y-** With your hands by your side and palms facing each other keep your arms extended and raise them in front of your body over your head making a Y then resist the movement back to starting position
 - o **T-** Now with your arms hanging in a neutral position towards the ground turn your thumbs outward, your pinkies should be touching each other. Pull your arms apart carrying your thumbs to the sky creating a T. Resist the weight back down to starting position
 - o **W-** Bend your arms at the elbow to a 90-degree angle with palms facing each other. Keeping the 90-degree angle carry your arms apart creating a W. it should look like your showing the ground your biceps but with your palms facing the ground
 - o https://www.youtube.com/watch?v=OcWuMa6Rt_g

- Plank Walk
 - o Start in a plank position
 - o Engage your abdominal muscles and try to suck in your stomach instead of allowing it to push out bringing your belly button to your spine
 - o Bring your shoulder blades together and rotate them downward as if you were trying to tuck them in your back pockets
 - o You are going to move the same side arm and leg outward and then bring the other arm and leg back to you while keeping a neutral spine
 - o Go to one side and return to plank position and then go the opposite way and return to plank position
 - o <https://www.youtube.com/watch?v=fsl25yg1g8>
- X-Sit-ups
 - o Lie on your back on the ground
 - o Spread your arms out and your legs apart creating a star
 - o Take your opposite hand and crossover meeting your opposite leg in the middle of your body
 - o <https://www.youtube.com/watch?v=uK1Uu2pdiQE>

Stretching

- Feet Together Hamstring Stretch
 - Sit on the ground with your legs extended
 - Flex your foot pulling your toe toward you
 - Reach forward for your feet
- Straddle Hamstring Stretch
 - Sit on the ground with your legs extended
 - Spread your legs apart
 - Reach towards opposite foot with opposite hand
- Butterfly Stretch
 - Sit on the ground with your legs extended
 - Put the soles of your shoes together bring your heel to your groin
 - Wrap your hand around the toes of your feet
 - Push your knees out/toward the ground with your elbows
- Figure 4 Stretch
 - Lay on your back bending one leg to a 90-degree angle
 - Take the target leg and cross it on top of the other leg placing the ankle on top of the knee
 - Grab the bent leg on the back of thigh and proceed to pull towards your chest
- Quad Pull
 - Stand upright on one leg
 - Bring your opposite leg to your butt by pulling with your hand
- Chest Stretch
 - Stand beside a wall
 - Extend arm behind you along the wall
 - Rotate the upper torso twisting away from the wall
- Shoulder Stretch
 - Bring target arm across your body
 - With the opposite arm grab the area between the elbow and triceps of target arm
 - Pull towards the body
- Triceps Stretch
 - Take target arm and place hand on the back, touching the opposite shoulder
 - Place free arm on the target arms elbow and pull downward
- Oblique Stretch
 - Place arms overhead full extended
 - Lean over to one side trying to form a c with your upper body
- Forearm Stretch
 - Take your target arm and extend it with your palm facing the sky
 - Grab your fingers with opposite hand and pull your fingers backwards while keeping your target arm straight

APPENDIX B: Nutrition Manual

Nutrition Manual

Tactical athletes face many physical challenges, such as strength, endurance, and power, as their job requirement. Added to these challenges of these tasks are demands imposed by factors such as sleep deprivation, extreme weather conditions, psychological stress, and extended duration beyond what might be experienced by many athletes or physically active people. Maintaining optimal nutrition status is crucial for these demands.

Daily energy requirements for tactical athletes are highly variable, based on gender, body composition, activities performed, age, and environmental factors. Energy requirements for these athletes is based on their basal energy expenditure, the energy demands of their training to maintain strength and endurance, and the energy demands of their job-related tasks.

The most accurate methods for determining energy requirements are indirect calorimetry and doubly labeled water, which provides estimates of oxygen consumption and carbon dioxide production. These methods require a lot of expensive equipment and are not practical for everyday use.

The National Academy of Medicine created a set of equations for both males and females. There are numerous prediction equations out there, but Harris-Benedict has been used most often. These two equations are listed below.

Institute of Medicine

Men: $EER = 662 - 9.53 \times \text{age in years} + PA \times (15.91 \times \text{weight[kg]} + 593.6 \times \text{height[m]})$

Women: $EER = 354 - 6.91 \times \text{age in years} + PA \times (9.36 \times \text{weight[kg]} + 726 \times \text{height[m]})$

Harris-Benedict Equation

Men: $BEE = 66.5 + 13.75 \times \text{weight(kg)} + 5.003 \times \text{height(cm)} - 6.775 \times \text{age}$

Women: $BEE = 655.1 + 9.563 \times \text{kg} + 1.850 \times \text{cm} - 4.676 \times \text{age}$

BEE = basal energy expenditure; EER = estimated energy requirement; PA = physical activity factor

Note: Physical activity is classified into 4 categories;

- Sedentary – typical daily living activities (e.g. household tasks, walking to the bus). PA = 1.00 for male and females.
- Low Activity – typical daily living activities plus 30 to 60 minutes of daily moderate activity (e.g., walking at [3-4mph]). PA = 1.11 for males, 1.12 for females.
- Active – typical daily living activities plus at least 60 minutes of daily moderate activity. PA = 1.25 for males, 1.27 for females.
- Very Active – typical daily living activities plus at least 60 minutes of daily moderate activity plus an additional 60 minutes of vigorous activity or 120 minutes of moderate activity. PA = 1.48 for males, 1.45 for females.

The tactical athlete's diet should promote overall health and maximize both physical performance and recovery. They may perform a wide variety of functions with a wide range of physical and mental demands. It is critical to make nutrition recommendations that are tailored to each athlete. In this manual, you will find information to be able to take the generalized nutrition information provided, and tailor it to your needs.

The Goal of this manual is to teach active people how to healthfully balance food, weight and exercise, and to foster a trust in the formula that healthful eating plus regular exercise contributes to an appropriate weight for each individual's body. Included in this manual will be the following:

- Understanding Basic Nutrition
- Pre-Camp Nutrition
- Training Nutrition
- Maintenance Nutrition

A fundamental key to eating well is to prevent yourself from getting too hungry. When people get too hungry, they tend to care less about the nutritional quality of the food they eat and more about grabbing whatever food is in sight. By evenly distributing your calories throughout the day, you can prevent hunger and curb your physiological desire to treat yourself with goodies.

So, what does a balanced food plan look like? Have you ever seen the government's food plate (www.ChooseMyPlate.gov)? Have you ever wondered what it meant?



This food plate suggests five kinds of foods per meal: protein, grain, fruit, vegetables, and dairy. By eating at least three, preferably four, and ideally five different kinds of nutrient-dense food at meals, it not only meets the governments recommendations, but it is the fundamental key to building a healthy active diet.

Eat at **I FAST** 5 Times per day
(every 3 hours)

- ❖ Keeps your metabolism high which helps you burn calories and stay lean
- ❖ Helps Build muscle by ensuring the building blocks are always available
- ❖ Provides consistent energy for quality workouts
- ❖ Encourages a variety of foods, which makes sure all nutrient needs are met
- ❖ Eating 2-3 times a day can make it difficult to meet nutrient needs, especially for athletes

Sample Meal Timing	
8:00 am	Breakfast (within 1 hour of waking)
10:00 am	Snack/Mini Meal
12:00 pm	Lunch
3:00 pm	Snack/Mini Meal
6:00 pm	Dinner
9:00 pm	Snack/Mini Meal

TIPS:

- It is essential to plan ahead when “on the go”
- Eating breakfast is NOT optional

Macronutrients

Carbohydrates: Grains, Vegetables, Fruits

The carbohydrate family consist of simple and complex carbohydrates. The simple carbohydrates are monosaccharides and disaccharides (single and double-sugar molecules). Glucose, fructose, and galactose are monosaccharides, the simplest sugars. Four common sources of disaccharides are table sugar(sucrose), milk sugar (lactose, a combination of glucose and galactose), corn syrup, and honey. Your body eventually converts all monosaccharides and disaccharides to glucose, which travels in the blood, hence the term blood glucose, to fuel your muscles and brain.

Complex carbohydrates, such as starch in plant foods and glycogen in muscles, are formed when sugars link together to form long complex chains, similar to a string of pearls. Plants store extra sugar in the form of starch. Examples of starches include potatoes, rice, bread, corn, and bananas. These starches are digested into glucose and then burned for energy or stored for future use. Humans store extra glucose mostly in the form of muscle glycogen and liver glycogen. This glycogen is readily available for energy during exercise. Let's take a closer look at each group.

Grains

Whole grain breads, cereals, and other grain foods are the foundation of a high-performance sports diet, as well as any diet. Grains that are unrefined or very lightly processed are excellent sources of carbohydrates, fiber, and B vitamins. They fuel your muscles, protect against needless fatigue, and reduce problems with constipation if they're fiber rich.

Grains account for about 25 percent of the calories consumed in the United States. Most American still consume more than half their grains in highly processed, refined foods (white bread, white rice, products made with white flour), and that does not support a healthy eating pattern. The refining process strips the grains of their bran and germ, thereby removing fiber, antioxidants, minerals, and other health-protective compounds. People who consume mostly refined grains tend to have a higher incidence of chronic diseases, such as adult-onset diabetes and heart disease. This is why Dietitians recommend that at least half of grains should be "whole" grain. This is not a comprised position because enriched and fortified grains also play an important role in providing nutrients of concern, including folic acid (to prevent birth defects) and iron (to prevent anemia). Refined grains when kept to half your daily consumption can be added to a balanced diet.

So, how much grains are enough? To get adequate carbohydrate intake to fully fuel your muscles, you need to consume carbohydrate as the foundation of each meal. By eating 200 calories of grains per meal (4 calories per 1 gram of carbohydrate), you can achieve adequate grain intake with each meal. Examples of this would be one bowl of cereal, two slices of bread, or one cup of rice.

Vegetables

Vegetables contribute important carbohydrate to the foundation of your diet. Vegetables are excellent sources of vitamin C, beta-carotene (the plant form of vitamin A), potassium,

magnesium, and many other vitamins, minerals, and health-protective substances. Vegetables, in general, offer slightly more nutritional value than fruits.

The recommended intake is at least 2 ½ cups of vegetables per day, and preferably more. If you are someone who does not consume vegetables on a regular basis, the trick is to eat large portions when you do eat vegetables, in order to get your 2 ½ cups in per day. To invest in your health, you should really try to eat as many vegetables per day as possible. Even if you are just consuming vegetables at 2 different meals, try to eat as much as possible. The food industry is working hard to make eating vegetables as easy as opening a bag of leafy greens, baby carrots, peeled and cubed butternut squash – or frozen bags of broccoli that can simply toss into the microwave. If you are wondering if these options are okay, the simple answer is yes.

Fruits

Fruits add to the strong foundation of carbohydrate needed for your diet. Fruits are rich in fiber, potassium, vitamin C, and many other vitamins. The nutrients in fruits improve healing; aid in recovery after exercise; and reduce the risk of cancer, high blood pressure, and constipation.

The recommended intake is at least 2 cups of fruit or juice per day. This would equal 2 standard pieces of fruit a day. The Center for Disease Control encourages consuming even more to help prevent many diseases of aging. The easiest way to consume fruits is in the morning with your breakfast. You can make a smoothie, put fruit in your cereal or oatmeal, drink a glass of orange juice, and this will give you a great start to your day. Strive to consume more fruit throughout the day by eating raisins instead of an energy bar for your pre-exercise snack. Try snacking on apple slices with peanut butter, or tossing dried cranberries into your salad.

Dairy and Calcium-Rich Foods

Dairy foods such as milk, yogurt, and cheese are not only quick and easy sources of high-quality, nutrient dense protein but also rich in vitamin D (if fortified) and calcium. Calcium is a mineral that is particularly important not only for growing children and teens but also for women and men of all ages. A diet rich in calcium and vitamin D helps maintain strong bones, reduces the risk of osteoporosis, and protects against high blood pressure.

Dairy products are not only natural sources of calcium, but they tend to be the most concentrated and convenient sources for people who eat on the run. If you need to limit your dairy consumption because you are lactose intolerant or are biased against dairy, you may have difficulty consuming the recommended intake of calcium that you would obtain from one glass of milk: you'd need to consume 3 cups of broccoli, 7 cups of spinach salad, 2 ½ cups of white beans, or 30 cups of unfortified soy milk in order to get the recommended intake. Calcium-fortified foods such as calcium-enriched soy milk, orange juice, almond "juice" (milk), other plant-based milk alternatives, and breakfast cereals can help you reach your calcium goals.

Calcium needs vary according to age; growing teens need four servings of calcium-rich foods, and most adults need 3 servings per day. This may seem like a lot if you are not a milk drinker, but even weight-conscious athletes can easily consume the recommended daily

minimum of three servings of low-fat dairy foods. Try to get half, if not all, of your calcium from food.

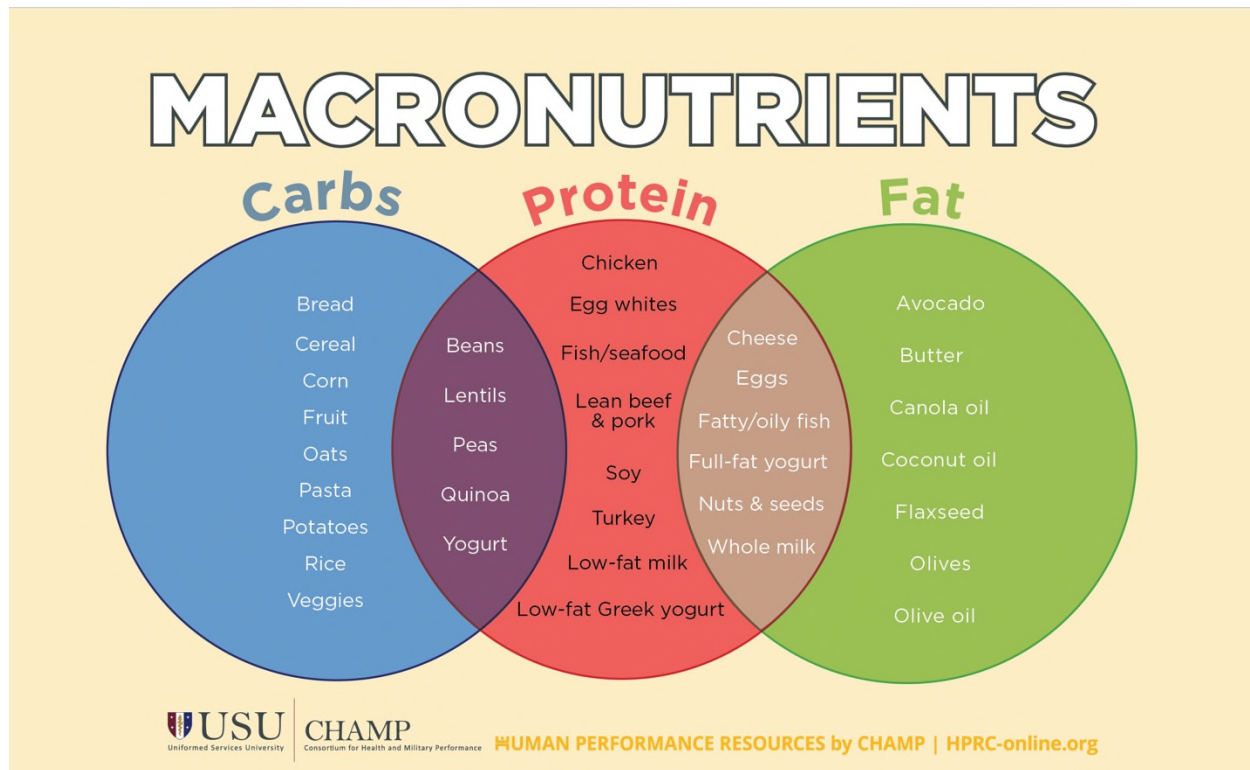
Some people have trouble digesting milk because they lack an enzyme (lactase) that digests milk sugar (lactose). These people are lactose-intolerant, but they still need calcium and can often tolerate yogurt (mainly Greek yogurt), hard cheeses such as cheddar and Parmesan, or even small amounts of milk taken with meals. They can also drink soy milk, A2 milk, or lactose-free milk. Rice, almond, and other nut milks are not nutritionally viable alternatives to dairy or soy milk.

Protein

Protein from plant sources (soy, beans, nuts, and legumes) and animal sources (meat, seafood, eggs, and poultry) is important in your daily diet. Protein should accompany the carbohydrates already on your plate. If one-quarter to one-third of your plate at each meal is covered with a protein-rich food, you can consume the right amount of the amino acids you need to build and repair muscles. Your darker meats (lean beef, chicken thighs) can reduce the risk of iron-deficiency anemia.

Most people, including athletes, tend to eat too much protein or too little protein, depending on their lifestyle, nutrition principles, or health consciousness. Large steaks, or large hamburgers have no place in anyone diets, especially athletes. An adequate amount of protein distributed evenly throughout the day is important for building muscles and repairing tissues.

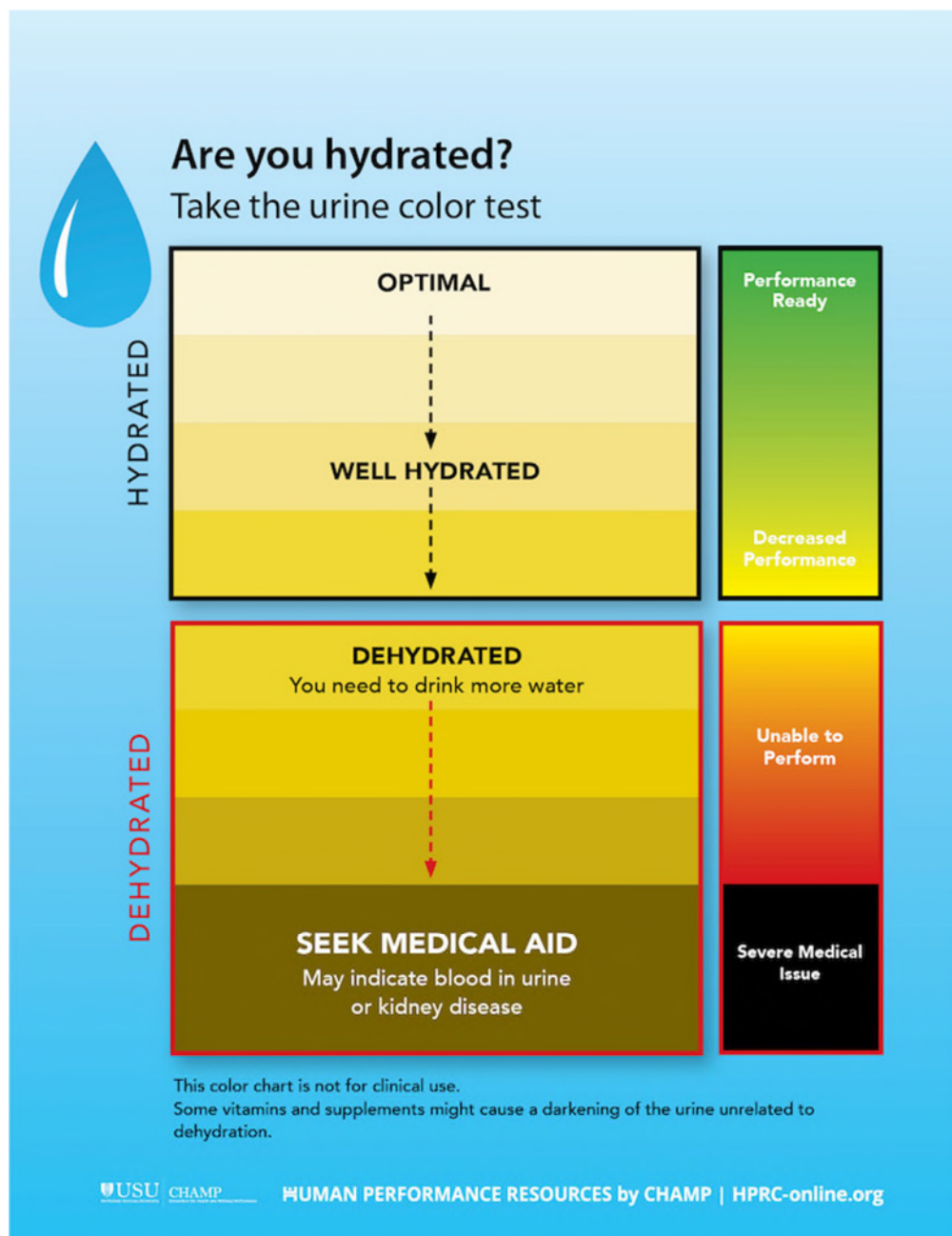
So, how much protein is enough? What are good sources? For most people 5 to 7 ounces of protein-rich food plus the protein you get in two to three servings of dairy or soy milk, yogurt, or cheese (need for calcium) offers adequate protein per day. Most Americans eat more than five ounces in one meal: 10-ounce steaks, 6-ounce chicken breast, or slabs of roast beef. Excess protein is not converted into bigger bulging muscles. However, other people often miss out on adequate protein when they dine on fruits, vegetables, or grains, due to dieting.



Fluids

Drinking enough fluid to replace sweat losses is essential for top athletic performance and normal daily activities. Fluids in your body play an important role: *Sweat* dissipates heat via the skin. *Blood* transports sugar (glucose) to the muscles and carries away lactate and waste products. *Urine* eliminates waste products. If you are a heavy sweater, and you fail to replace those losses, you risk the chance of poor athletic performance, and you may even endanger your health. Unfortunately, many active people do not pay attention to proper hydration.

For casual exercisers, water is a good choice. It is convenient, familiar, and meets your body's needs. For high intensity exercisers (tactical athletes) who expend large amounts of energy for more than an hour, consuming *sports drinks* during exercise optimizes fluid retention, delays dehydration, and enhances endurance. The drink should offer 50 to 80 calories per 8 ounces plus 110 to 170 milligrams of sodium. Be sure to try out different drinks to see which ones will work best with your stomach.



The above content is a general overview of basic nutrition. If you follow the guidelines of basic nutrition, then you will meet the guidelines of pre-camp nutrition recommendations. The goal is to make sure you are fueling your body with the most nutrient dense food to prevent decreased performance or volitional fatigue. When your body is fueled properly, you should be able to achieve maximum performance.

Considerations for the Pre-exercise Meal or Snack

A pre-exercise meal or snack primes the body with the nutrients it needs for performance. When deciding on your pre-exercise meals, there are several considerations to make:

- Gastrointestinal tolerance
- Fluids for hydration
- Overall energy content and carbohydrate availability
- Fat and protein intake
- Possible inclusion of caffeine
-

Gastrointestinal tolerance is a major concern for all athletes. Physical activity of any kind diverts blood flow from the intestine to the extremities, so digesting large meals can be difficult during this time. It is imperative to avoid any gastrointestinal complications of any kind for obvious reasons. Tactical athletes should listen to their bodies and decide what meals are best tolerated. Here are several strategies for designing preexercise meals:

- Avoid large amounts of dietary fiber (over consumption of carbohydrates) and be aware of foods that are solely fructose based and prepackaged food (protein bars) that contain sugar alcohols (artificial sugar).
- Keep the fat content low to avoid slowing gastric emptying.
- Allow a time interval between the meal and the exercise that is appropriate for digesting the size of the meal.
- Include a moderate amount of protein, again to avoid slowing gastric emptying.
- Keep calorie and carbohydrate levels high enough to provide energy for exercise but low enough to facilitate gastric emptying.

Pre-Event Nutrition

Consume a high carbohydrate, moderate protein, lower fat meal 2-3 hours before the event

- ❖ Keeps you from feeling hungry during exercise

Consume a small portion of a high carbohydrate snack 30 minutes prior to the event

- ❖ Tops of muscle energy stores to prevent the “crash”

Pre-Event Meal Ideas

- **Grilled Chicken, rice, fruit/vegetable**
- **Spaghetti with meat sauce and fruit**
- **Deli Sandwich, yogurt, fruit/vegetable**
- **Breakfast Sandwich (lean ham, cheese, egg and muffin) and fruit**

Pre-Event Snack Ideas

- **Dried Fruit**
- **Banana**
- **Pretzels**
- **Graham Crackers**
- **Bagel**
- **White Bread**
- **Granola Bar**
- **100% Fruit Juice**

Meal Day of Camp

Like previously stated, you will need to learn what foods are best for you before training. No single meal is perfect for everyone. Tactical athletes may prefer to eat very little 2 to 4 hours prior to exercise, while others may be able to eat right before performance starts. Athletes, in general, perform better after having a snack with 100 to 300 calories within an hour of the event, or eating a simple meal of 300 to 600 calories within 2 to 3 hours of the camp.

Eating prior to camp is to enhance performance without causing gastrointestinal distress. It helps to maintain a normal blood sugar and prevent hypoglycemia, which can lead to light-headedness, blurred vision, needless fatigue, inability to concentrate, and indecisiveness. Pre-exercise meals prevent hunger and settle the stomach by helping absorb gastric juices. These meals provide energy to fuel the muscles. Despite what dieting outlets discuss, your body is perfectly capable of digesting food you eat before you exercise and putting it to good use. The following are easy-to-digest meal recommendations before you start camp:

- Breakfast: oatmeal, cold cereal, banana, toast, juice, English muffin, bagel, yogurt, French toast, or pancakes.
- Lunch: turkey sandwich (lite mayo); chicken noodle soup, thick-crust pizza with single cheese.
- Snacks: bagel, toast, crackers, pretzels, applesauce, banana, yogurt, energy bar, half sandwich.
- Dinner: spaghetti with few meatballs, 4-ounce serving of lean protein with extra rice or potato, vegetable, rolls.

Fluid During Training

On a daily basis, make sure you drink enough fluid. You can easily determine if you have had enough to drink by monitoring the volume and color of your urine. Refer to the urine color chart included in this guide. Please note that if you take vitamins, your urine may be dark. In this case, monitor your hydration by the quantity of urine rather than just the color. Throughout the day, you don't have to drink only water for fluids. Juice, sport drinks, iced tea, and watery foods such as yogurt, oranges, melon, and soup all have a high-water content and can rehydrate your body. Make sure to drink before you get thirsty. By time you feel thirsty, you will have lost one percent of your body weight. Your heart will need to beat 3-5 more times/minute. You can measure your sweat rate, please see below.

Weigh yourself naked before and after a hard workout. Each pound lost represents one pound (16 ounces) of sweat. During training, practice replacing sweat losses with the goal of losing less than 2-percent of your weight (3 pounds for 150lb athlete). If you lose 1.5 pounds (24 ounces) per hour, you should drink 8 ounces of water, sport drink or diluted juice every 20 minutes.

Recovery Nutrition

Upon completing your camp each day, the tactical athlete should start the recovery process to refuel, rebuild, and rehydrate. The immediate post exercise period (within 60 minutes of finishing activity) is a critical time for delivering nutrients to the body. Although engineered sports foods may advertise a 3-to-1 or 4-to-1 ratio of carbohydrate to protein, it is not important for you to get obsessed with. The idea is to eat primarily carbohydrate with 10 to 20 grams of protein as the accompaniment, depending on your body size (precisely 0.15 g protein/lb or 0.3g/kg of body weight).

If you enjoy tracking your food and want a more specific recommendation, target about 0.5 gram of carbohydrate (1g/kg) and 0.1 to 0.15 gram of protein per pound (0.25 to 0.3 g/kg) of body weight every hour for four to six hours. Let's assume you weigh 150lbs (68kg). Here is the following equation:

$$150\text{lb} \times 0.5 \text{ g carbohydrate} = 75\text{-gram carbohydrate} \times 4 \text{ calories/carbohydrate} = 300 \text{ calorie carbohydrate}$$

$$150\text{lb} \times 0.1\text{-}0.15\text{-gram protein} = 15\text{-}22\text{-gram protein, more easily } 20\text{-gram protein} \times 4 \text{ calories/protein} = 80 \text{ calorie protein}$$

Provided below are carbohydrate-protein combinations that fit this formula:

- 3 scrambled eggs and a bowl of oatmeal with maple syrup
- 16 ounces chocolate milk and energy bar (read the label for accurate protein/carb serving)
- Peanut butter and honey sandwich and yogurt
- Fruit smoothie (1 cup sweetened Greek yogurt with banana and berries)
- Turkey sub and grape juice

Please note you can eat more than your estimated amount, but it will not speed up your recovery process. Choose foods you like to eat, that do not upset your stomach, and make you feel your best. Choosing foods that do not meet these recommendations will set you up for failure. Just because your colleague is eating a certain way does not mean you should, or that those foods will work for you. Always remember nutrition is not a one size fits all model.

If exercising diminishes your appetite, as it does for some, you might find liquids more appealing than solid foods. Liquid and solid foods refuel your muscles equally. Start off with things like chicken broth, ginger ale, or a fruit smoothie. If you are starving, there is nothing wrong with eating a sub sandwich with 1 serving of meat and cheese with 100% fruit juice.

Fluids after Hard Exercise and Sodium Replacement

Drink to quench your thirst, and then drink a little more. Your thirst mechanism may inadequately indicate whether or not you've consumed enough fluids, so monitor your urine. If several hours have passed without a need to urinate, you are dehydrated. Drink more fluids. Chocolate milk offers water (rehydration), carbohydrates (to refuel muscles), protein (to repair muscles), and sodium (to retain fluids). Drinking 12 to 20 ounces of chocolate milk within one hour after exercise enhances recovery.

Sweat contains not only water but also small amounts of sodium (and other electrolytes) that keep your body in fluid balance. You lose small amounts of sodium when you sweat, but you normally do not deplete your stores, unless under extreme circumstances such as exercising > 3 hours in the heat. In this case, you should consume salty foods, like pretzels before, during, and after exercise. Commercial fluid replacement drinks are generally weak sources of sodium compared to what you consume in standard foods. The sodium in sport drinks does not adequately replace sweat losses (but it enhances fluid retention). Pretzels, soup, pizza, and other salty foods eaten before and after exercise are stronger sources of sodium; enjoy them with water.

Post-Event Nutrition (Recovery)

- ❖ 4:1 or 3:1 Carb:Protein Ratio
 - ❖ 60 g carbohydrate with 15-20 g protein
 - ❖ Consume within 30 minutes following exercise
- ❖ REPLACE lost fluids

Recovery Snack Ideas

- **Chocolate Milk & Fruit**
- **Bagels with 2% cheese and fruit**
- **Fruit smoothies with yogurt**
- **Homemade egg sandwich**
- **Veggie Pizza**

Supplements

Supplement means “in addition to.” A supplement is “a vitamin, mineral, herb, botanical, amino acid, metabolite, constituent, extract, or any combination of these ingredients,” which is a very broad definition. An ergogenic aid is any substance or strategy that improve athletic performance. They are not intended as a replacement for food. Athletes of any kind should focus on the fundamentals of nutrition and a well-balanced diet before considering supplements. Most athletes can meet there needs with a balanced diet, proper recovery nutrition, and adequate sleep. A supplement is “a vitamin, mineral, herb, botanical, amino acid, metabolite, constituent, extract, or any combination of these ingredients,” which is a very broad definition. An ergogenic aid is any substance or strategy that improve athletic performance. If you think you need a supplement, talk with your healthcare provider before spending your money. Most of the time it is expensive urine. More of anything does not mean better and remember your body can only take in some much protein, vitamins, minerals, ergogenic aids. Excessive supplementation can lead to vitamin toxicity, or kidney failure. Things to keep in mind when purchasing a supplement:

- Supplements are not regulated in the same way as food.
- Supplement do not have to be proven safe or effective to be sold
- Supplements may contain ingredients that are not listed on the label including BANNED substances that could cause you to fail a drug test.
- Natural or Organic is not synonymous with safe

If you choose to take a supplement look for the following:

- USP verified, NSF certified for sport, and Informed choice logos on supplements
- In order to carry these labels, the supplement companies must pay for voluntary testing and auditing for banned substances. What is on the label, is in the product.
- Be sure to purchase supplements from a reputable supplier. Counterfeit products do exist, especially online.

Post-Training Recommendations

As stated in the basic nutrition section, if you try to follow those dietary guidelines every day, you will be successful in maintaining your desired weight, athletic performance. Keep in mind that this is a lifestyle, and not a quick fix diet. If diets worked, we would all be skinny. No one day or one week of “bad” nutritional choices will affect what you have achieved. However, if these decisions are continued over a long period of time (6 months are greater) you will notice changes in your body, or how you feel. If you are requiring excessive amounts of caffeine (more than 1 cup per day), or other supplements to carry out your normal activities of daily living, you are not eating properly, nor hydrating your body the way it needs to be.

In the next sections I will provide basic guidelines for grocery store shopping. Always shop the perimeter of the store first, before going down the aisles. The perimeter contains the freshest, most nutrient dense foods. I will also provide you with a simple guideline to increase body weight and lean mass without adding fat mass, decreasing body weight and increasing lean mass without adding fat mass, Best options at a Fast Food Guide, and 3 sample meal plans for 2000 calories, 3000 kcals, and 4500 calories per day.

Grocery Store Shopping Strategies for safe & healthy food

The first step towards proper sports nutrition is getting the right foods.

Following some simple strategies when shopping can ensure that you have the materials you need to succeed.

SHOP THE PERIMETER OF THE STORE FIRST

The freshest, healthiest foods are usually found around the perimeter of the store. Avoiding ending down the aisles helps you avoid the temptation of buying unhealthy, processed foods.

- Don't shop when you're hungry. You're more likely to make impulse purchases on less nutritious items that cost more
- Make and stick to a shopping list. If you keep a running list of items you need at home, you won't have to worry about forgetting anything.
- Organize your shopping list into sections according to the layout of the supermarket to cut down on time spent at the store.
- Pick up non-refrigerated items first, then refrigerated and frozen. Use frozen items to keep your cold items cold in your cart and bags!
- Check for supermarket specials printed in the newspaper or online and plan your shopping trip around what is on sale.

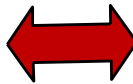
Grocery Store Shopping Strategies for safe & healthy food

Produce

- Aim to buy a variety of colors. The deeper the color, the more nutritious the food.
- Choose loose produce rather than packaged so you have more control over what you select
- Don't purchase produce with mold, bruises or cuts.
- Only purchase what you will use within a week! Shopping twice a week can be helpful to ensure you have fresh produce
- When shopping farmers markets be sure to go early in the morning to avoid produce that has been sitting out all day
- Buy only pasteurized juices

Milk and Dairy Products

- Check the "sell-by" date on all dairy products
- When buying eggs, choose a carton that is cold
- Make sure eggs are clean and not broken or cracked
- Buy milk and other dairy products toward the end of your shopping trip. This will lessen the time these items are out of refrigeration.



Meat Department

- Make sure packaging is tightly sealed and cold to the touch.
- Choose packaged chicken that looks pink, not gray.
- Check the "sell-by" date. If the date has passed, don't buy it.
- Always look for the Safe Food Handling label on packages of bacon and fresh sausage. This label means the meat has undergone safe processing and includes handling and cooking tips.
- Select meats and poultry after shopping for non-perishables.
- Ask to have meat and poultry bagged separately from other groceries.
- Buy fish only from reputable sources like grocery stores and seafood markets.
- Check for proper refrigeration of fresh fish. Look to see that flesh is shiny and firm, not separating from the bone and the odor is fresh and mild, rather than overly "fishy."
- Make sure packaged seafood is well-packed in ice and that packages are tightly sealed and free of dents and tears. Avoid packages containing ice crystals. This is a sign the seafood has previously thawed.
- Buy unwrapped cooked seafood such as shrimp, crab or smoked fish only if it is displayed in a separate case or in a separate section from raw fish. Bacteria on raw fish can contaminate cooked fish.

Increasing Body Weight and Lean Mass

Guidelines to Increase lean mass and strength without adding fat mass

- **Eat all day long – preferable every 2-3 hours with protein and carbohydrates spread evenly throughout the day.**
 - Overeating at any meal or skipping meals can lead to the body not using the protein and carbohydrates efficiently that your body depends on for gaining muscle mass
- **Eating within one hour before and one hour after strength training has been proven to be essential to enhancing muscle growth.**
 - It is suggested that eating at least 10-20 grams of protein within one hour post exercise along with carbohydrates in a 3-1 ratio (carbohydrates to protein) will help with muscle building
 - It is also recommended if tolerated to consume some carbohydrates and a small amount of protein one hour prior to training to top of glycogen stores needed for energy and have amino acids available to start building muscle.
- **Consume calorie AND nutrient dense foods. The need for higher calories does not give you the green light to eat “junk” food.**
 - Ideal choices might be juices, low fat milk, nuts, dried fruit, trail mix, peanut butter sandwiches or yogurt smoothies
- **The way to gain muscle is through strength training not a bunch of extra protein.**
 - Protein and carbohydrates are needed for repair and growth, but muscle growth is stimulated by the muscle damage that occurs during strength training
- **The goal is to take in 1.2 -2.0 grams of protein per kg body weight per day.**
 - The protein needs to be high quality protein (has all 9 essential amino acids) such as meat, soy, whey and casein (found in dairy products)

Decreasing Body Weight and Increasing Lean Mass

Guidelines to Increase lean mass and strength without adding fat mass

- **Eat all day long – preferable every 2-3 hours with protein and carbohydrates spread evenly throughout the day.**
 - Overeating at any meal or skipping meals can lead to the body not using the protein and carbohydrates efficiently that your body depends on for gaining muscle mass
- **Eating within one hour before and one hour after strength training has been proven to be essential to enhancing muscle growth.**
 - It is suggested that eating at least 10-20 grams of protein within one hour post exercise along with carbohydrates in a 3-1 ratio (carbohydrates to protein) will help with muscle building
 - It is also recommended if tolerated to consume some carbohydrates and a small amount of protein one hour prior to training to top of glycogen stores needed for energy and have amino acids available to start building muscle.
- **Consume only 300-500 calories below your estimated energy needs**
 - Predicted energy needs are current weight x 10 plus estimated energy use. A registered licensed dietitian/preferably Board Certified Specialist in Sports Dietetics (CSSD) can help you find your caloric needs
- **The way to gain muscle is through strength training not a bunch of extra protein.**
 - Protein and carbohydrates are needed for repair and growth, but muscle growth is stimulated by the muscle damage that occurs during strength training
- **The goal is to take in 1.2 -2.0 grams of protein per kg body weight per day.**
 - The protein needs to be high quality protein (has all 9 essential amino acids) such as meat, soy, whey and casein (found in dairy products)

Healthy Restaurant Guide (Fast Food Burger Chain)

Figuring out healthier options at your favorite fast food burger chain can be tricky. A typical meal at a burger joint consists of a "sandwich", some fries and a drink, which can quickly come in at over 1700 calories for something like Burger King's Triple Whopper with a large fries and a 16 oz. soda. A better option would be a regular single patty burger, small fries, and water, which is about 500 calories. Alternatively you may enjoy a veggie burger smothered in grilled onion and mushrooms. Or if you want a large beef burger, then skip the fries and soda and have a side salad and water instead.

Less Healthy Choices	More Healthy Choices
• Double-patty hamburger with cheese, mayo, special sauce, and bacon • Fried chicken sandwich • Fried fish sandwich • Salad with toppings such as bacon, cheese, and ranch dressing • Breakfast burrito with steak • French fries • Milkshake • Chicken "nuggets" or tenders • Adding cheese, extra mayo, and special sauces	• Regular, single-patty hamburger without mayo or cheese • Grilled chicken sandwich • Veggie burger • Garden salad with grilled chicken and low-fat dressing • Egg on a muffin • Baked potato or a side salad • Yogurt parfait • Grilled chicken strips • Limiting cheese, mayo, and special sauces

Healthy Restaurant Guide (Fried Chicken Chain)

Although certain chains have been advertising “no trans fats” in their food, the fact is that fried chicken can pack quite a fattening punch. According to the restaurant’s nutrition info, just a single Extra Crispy Chicken breast at KFC has a whopping 440 calories, 27 grams of fat, and 970 mg of sodium. A healthier choice is the drumstick, which has 160 calories, 10 grams of fat, and 370 mg of sodium. Alternatively, if you like the breast meat, take off the skin and it becomes a healthy choice at 140 calories, 2 grams of fat, and 520 mg of sodium.

Less Healthy Choices	More Healthy Choices
• Fried chicken, original or extra-crispy. • Teriyaki wings or popcorn chicken • Caesar salad • Chicken and biscuit “bowl” • Adding extra gravy and sauces	• Skinless chicken breast without breading • Honey BBQ chicken sandwich • Garden salad • Mashed potatoes • Limiting gravy and sauces

Healthy Restaurant Guide (Asian Food)

Asian cultures tend to eat very healthfully, with an emphasis on veggies, and with meat used as a “condiment” rather than being the focus of the meal. Unfortunately, Americanized versions of these ethnic foods tend to be much higher in fat and calories – so caution is needed. But here’s a great tip for all Asian restaurants – use the chopsticks! You’ll eat more slowly, since you can’t grasp as much food with them at one time as you can with your normal fork and knife.

Less Healthy Choices	More Healthy Choices
• Fried egg rolls, spare ribs, tempura • Battered or deep-fried dishes (sweet and sour pork, General Tso’s chicken) • Deep-fried tofu • Coconut milk, sweet and sour sauce, regular soy sauce • Fried rice • Salads with fried or crispy noodles	• Egg drop, miso, wonton, or hot & sour soup • Stir-fried, steamed, roasted or broiled entrees (shrimp chow mein, chop suey) • Steamed or baked tofu • Sauces such as ponzu, rice-wine vinegar, wasabi, ginger, and low- sodium soy sauce • Steamed brown rice • Edamame, cucumber salad, stir- fried veggies

Healthy Restaurant Guide (Italian Food)

The anti-carbohydrate revolution has given Italian food a bad rap, but Italian is actually one of the easiest types of cuisine to make healthy. Stay away from fried, oily or overly buttery, as well as thick crust menu items, and you can keep your diet goals intact. Watch out for the following terms, which are common culprits of high fat and calories: alfredo, carbonara, saltimbocca, parmigiana, lasagna, manicotti, stuffed (all have heavy amounts of cream and cheese). Generally Italian places have lots of veggies in their kitchen so it's easy to ask to have extra veggies added to your meal.

Less Healthy Choices	More Healthy Choices
• Thick-crust or butter-crust pizza with extra cheese and meat toppings • Garlic bread • Antipasto with meat • Pasta with cream or butter-based sauce • Entrée with side of pasta • Fried (“frito”) dishes	• Thin-crust pizza with half the cheese and extra veggies • Plain rolls or breadsticks • Antipasto with vegetables • Pasta with tomato sauce and veggies • Entrée with side of veggies • Grilled (“griglia”) dishes

Healthy Restaurant Guide (Sub Sandwich Chains)

Americans love all types of sandwiches: hot, cold, wrapped, foot long. Usually eaten with a salad instead of fries. The ads promote the health benefits of sandwich shops. Easier said than done... studies have found that many people tend to eat more calories per meal at a sub shop than at McDonalds. This may be because people feel so virtuous eating “healthy” like the ads promise, that they reward themselves with chips, sodas, or extra condiments. You can make healthier choices at a deli or sub shop but you need to use some common sense.

Less Healthy Choices	More Healthy Choices
• Foot-long sub • High-fat meat such as ham, tuna salad, bacon, meatballs, or steak • The “normal” amount of higher-fat (cheddar, American) cheese • Adding mayo and special sauces • Keeping the sub “as is” with all toppings • Choosing white bread or “wraps” which are often higher in fat than normal bread	• Six-inch sub • Lean meat (roast beef, chicken breast, lean ham) or veggies • One or two slices of lower-fat cheese (Swiss or mozzarella) • Adding low-fat dressing or mustard instead of mayo • Adding extra veggie toppings • Choosing whole-grain bread or taking the top slice off your sub and eating it open-faced

Healthy Restaurant Guide (Mexican Restaurants)

Fast food chains that specialize in tacos or burritos can be caloric minefields or they can be a good option for finding healthy fast food. Rice, beans, salsa and a few slices of fresh avocado can make a very healthy meal. But adding cheese, sour cream and tortilla chips can turn even a good meal unhealthy. Be sure to also remember portion control since these types of restaurants can have enormous menu items (eat half and take the rest for another meal).

Several chains, like Taco Bell and Baja Fresh, have “healthy” menu options that feature less fat and fresher ingredients.

Less Healthy Choices	More Healthy Choices
• Crispy shell chicken taco • Refried beans • Steak chalupa • Crunch wraps or gordita-type burritos • Nachos with refried beans • Adding sour cream or cheese	• Grilled chicken soft taco • Black beans • Shrimp ensalada • Grilled “fresco” style steak burrito • Veggie and bean burrito • Limiting sour cream or cheese

Sample Meal Plans (2000 Calorie Diet Plan)

Day 1	Day 2
Breakfast • 2 cups whole grain cereal 1 cup skim milk • Fruit Snack • 1 cheese sticks Apple Lunch • 3 oz turkey 1 sl. cheese sandwich on whole grain bread • Fruit • 8 oz skim milk Snack • 1/2 c. trail mix Dinner • 4 oz steak • 1 small baked potato with small amount of butter • Broccoli • 1 cup cut fruit 1 c. skim milk Snack • 1 c. low fat yogurt • ½ c. fruit	Breakfast • 2 pancakes or waffles with small amount of syrup • 2 scrambled eggs Fruit Snack • 6 oz. low fat Yogurt Lunch • 3 oz grilled chicken sandwich on whole grain bun • Side vegetable salad with 2 T light dressing • 8 oz skim milk Snack • ½ c. of trail mix Fruit Dinner • 4 oz salmon or any fish 1/2 cup brown or wild rice Broccoli • cup cut fruit 1 c. skim milk Snack • cups whole grain cereal and 1 cup skim milk

Sample Meal Plans (3000 Calorie Diet Plan)

Day 1	Day 2
Breakfast • 2 cups whole grain cereal 1 cup skim milk • Fruit Snack • cheese sticks Apple Lunch • oz turkey on 1 sl. cheese sandwich on whole grain bread Fruit • 8 oz skim milk Snack • 1 c. trail mix Dinner • 6 oz steak • 1 med baked potato with small amount of butter • Broccoli • 1 cup cut fruit 1 c. skim milk Snack • Yogurt	Breakfast • 2 pancakes or waffles with small amount of syrup • 2 scrambled eggs Fruit Snack • Yogurt Lunch • 4 oz grilled chicken sandwich on whole grain bun • Side salad with light dressing 8 oz skim milk Snack • Snack baggie of trail mix Fruit Dinner • 6 oz salmon or any fish 1 cup brown or wild rice Broccoli • cup cut fruit 1 c. skim milk Snack • cups whole grain cereal and 1 cup skim milk

Sample Meal Plans (4500 Calorie Diet Plan)

Day 1	Day 2
Breakfast • Egg, ham and cheese on English muffin • 2-3 cups whole grain cereal 1 cup skim milk • 8 oz orange juice Snack • 3-4 cheese sticks • 1 apple Lunch • 4 oz Turkey and 1 sl. cheese sandwich on whole wheat bread Fruit • 8 oz. skim milk Yogurt Snack • 1 c. trail mix • 16 oz. sports drink Dinner • 6-8 oz. steak • 1 large backed potato with butter Broccoli • 1 c. cut fruit 1 c. skim milk Snack • 20-24 oz Fruit and yogurt smoothie	Breakfast • 2-3 large pancakes or waffles with syrup • 2-3 scrambled eggs • c. oatmeal made with 1/2 cup skim milk • 8 oz orange juice Snack • Yogurt with 1 c. fruit Lunch • c. General Tso chicken 2-3 c. rice • Fruit or vegetable 8 oz. skim milk Snack • 1 c. nuts • 16 oz. sports drink Dinner • 2 large chicken breasts • 2-3 cup whole grain pasta with marinara sauce • Large vegetable salad with light or thin/runny dressing • 1 c. skim milk Snack • 2-3 cups whole grain cereal and 1 cup skim milk

APPENDIX C: Workday Physical Activity Survey

The Alabama Department of Corrections (ADOC) has contracted with Troy University in order to better understand the physical demands of being employed by ADOC. This survey is part of ADOC's work with Troy and is being sent to all ADOC personnel.

Your answers to this survey are entirely anonymous. That means that no one within ADOC or Troy University would be capable of connecting your answers with your name. These questions are strictly designed to help both ADOC and Troy University understand the physical demands of the job, and to get ADOC employees' opinions on the physical testing requirements prior to employment, and how they reflect the actual demands of the job. Please answer each question as honestly as possible.

Thank you for taking the time to fill out this survey.

Demographics

In this section of questions, you will answer general questions about yourself. These answers are anonymous, and neither ADOC nor Troy University will be able to connect your answers to your name.

1. Sex:
 - a. Female
 - b. Male
 - c. Prefer not to say
2. Age:
 - a. 18-24
 - b. 25-34
 - c. 35-44
 - d. 45-54
 - e. 55-64
 - f. 65+
3. How long have you been employed by the Alabama Department of Corrections?
 - a. Less than 1 year
 - b. 1-3 years
 - c. 4-6 years
 - d. 7-9 years
 - e. 10-12 years
 - f. 13+ years

Physical Activity Questions

In this section, you will answer questions relating to your physical activity during a typical workday. If it helps, think of the last week that you worked, and pick a day that is representative of what you typically do during the day while at work.

1. In a typical workday, how much time do you think you spend sitting down?
 - a. Less than 1 hour
 - b. 1-3 hours
 - c. 4-6 hours
 - d. 7-9 hours

- e. 9+ hours
- 2. In a typical workday, how much time do you think you spend standing?
 - a. Less than 1 hour
 - b. 1-3 hours
 - c. 4-6 hours
 - d. 7-9 hours
 - e. 9+ hours
- 3. In a typical workday, how much time do you think you spend walking?
 - a. Less than 1 hour
 - b. 1-3 hours
 - c. 4-6 hours
 - d. 7-9 hours
 - e. 9+ hours
- 4. In a typical workday, how much time do you think you spend jogging?
 - a. Less than 20 minutes
 - b. 20 – 40 minutes
 - c. 40 – 60 minutes
 - d. 60 – 80 minutes
 - e. 80+ minutes
- 5. In a typical workday, how much time do you think you spend running?
 - a. Less than 5 minutes
 - b. 5-10 minutes
 - c. 10-15 minutes
 - d. 15-20 minutes
 - e. 20+ minutes

Physical Testing Questions

In this section, you will answer questions relating to the Physical Ability / Agility Test that is a standard part of ADOC officer training. You will also answer questions related to other physical fitness tests that you may not have performed before. You will be asked to answer each question based on how representative you feel each physical activity is in relation to your current job duties. The scale is described in each question.

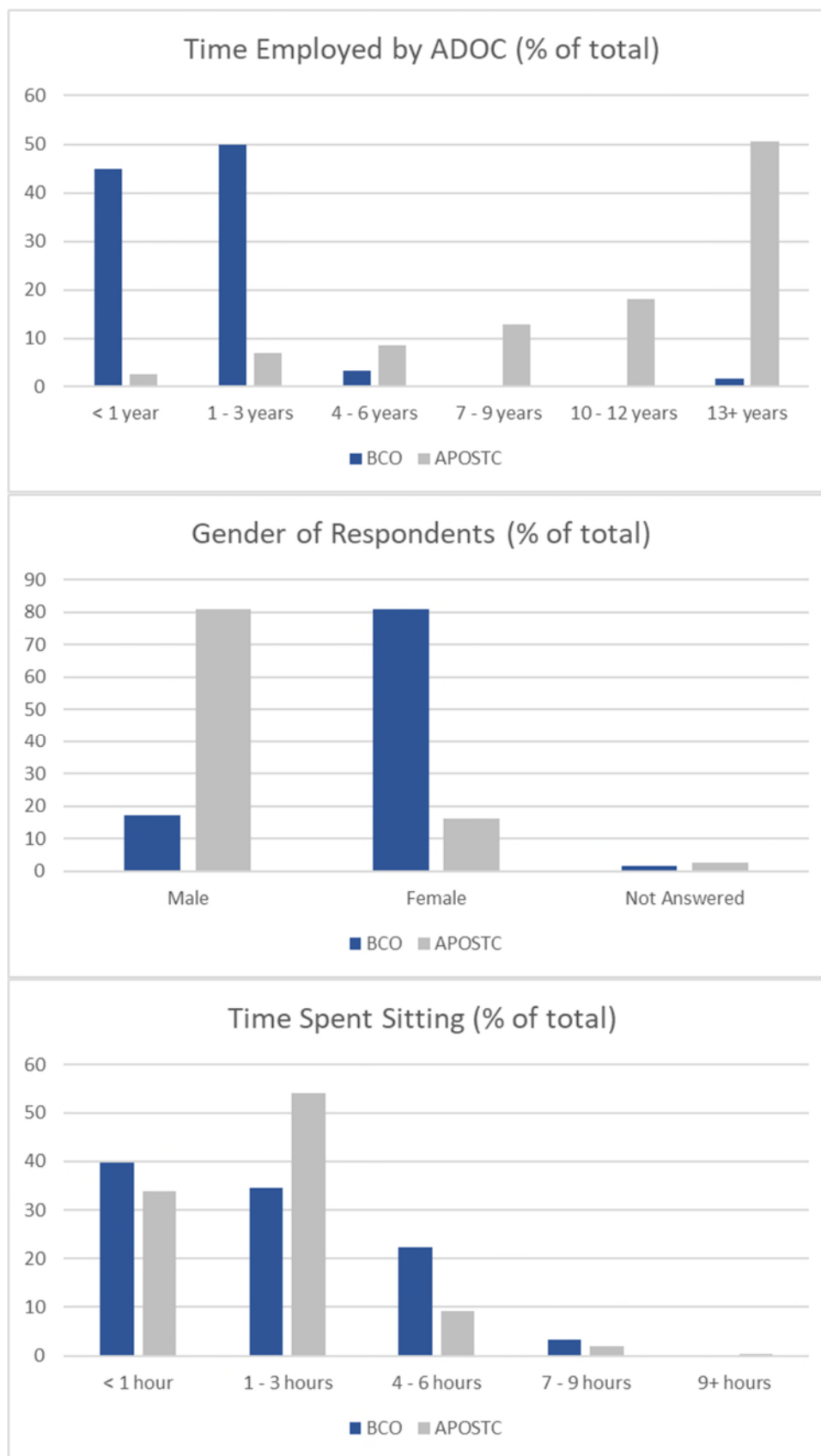
1. On the scale below, please indicate how much you think pushing a car 15 feet as quickly as possible relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”
2. On the scale below, please indicate how much you think scaling a 6-foot-high fence as quickly as possible relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”
3. On the scale below, please indicate how much you think moving through an open window in a wall as quickly as possible relates to your current job duties. On the scale,

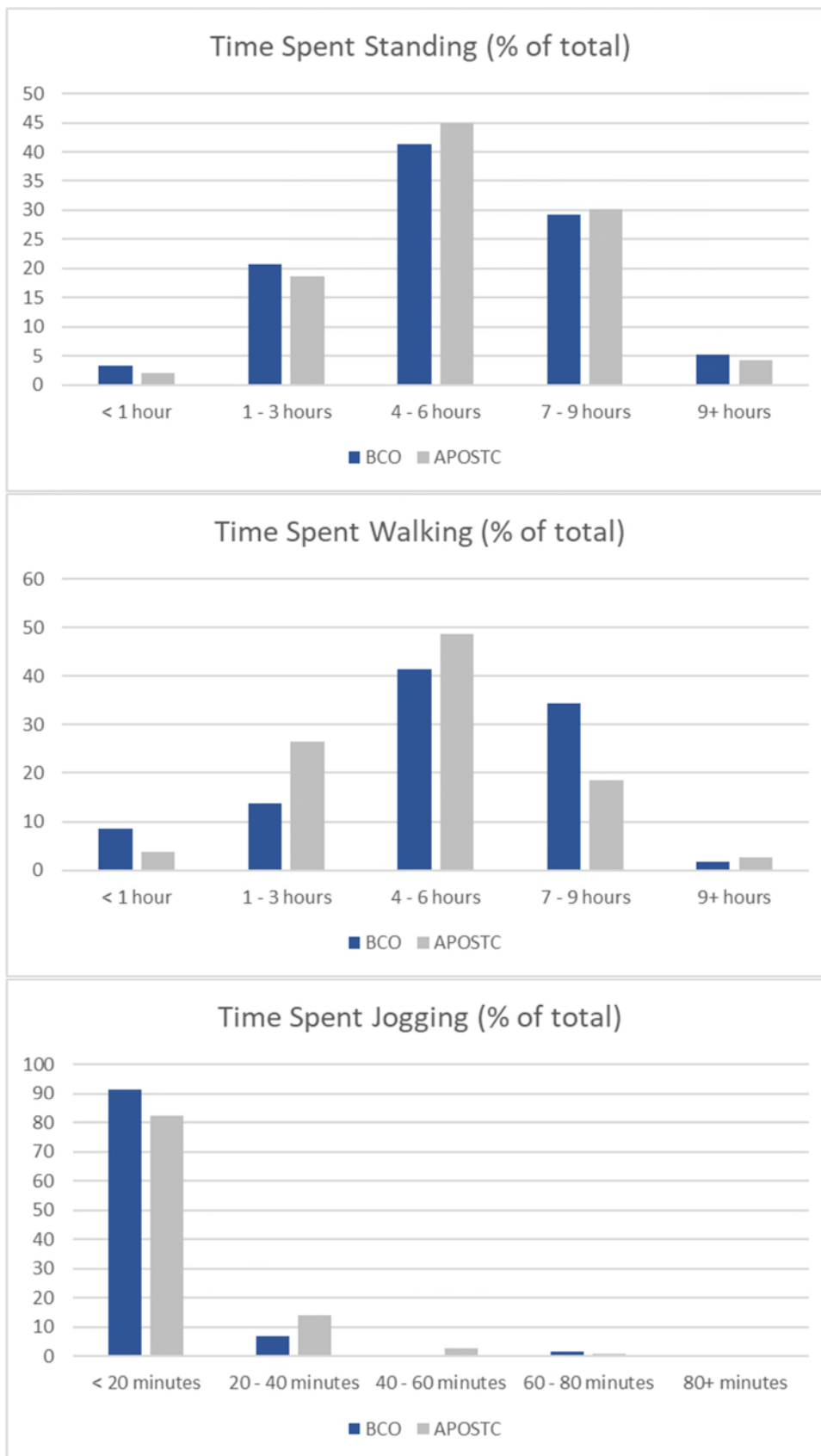
an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”

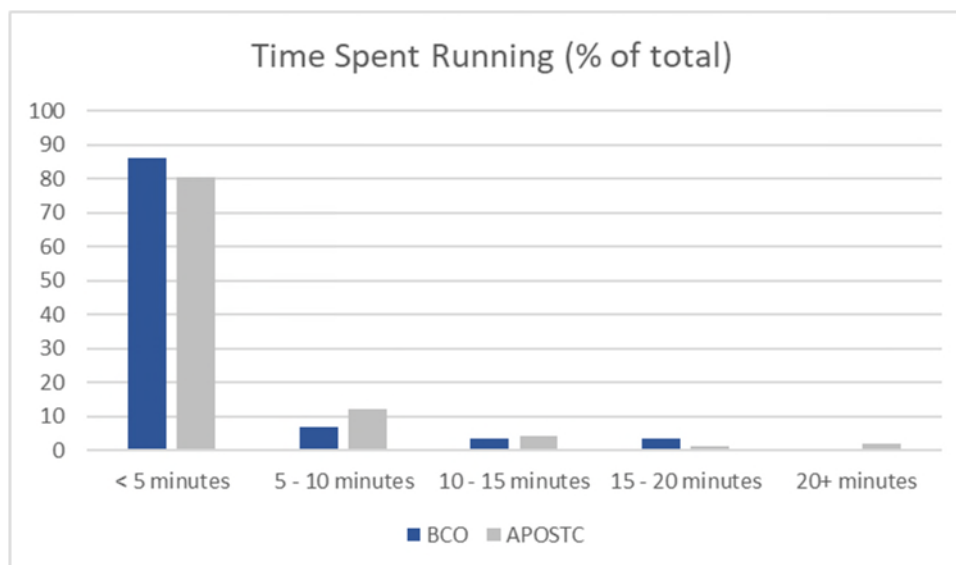
4. On the scale below, please indicate how much you think walking across a balance beam without falling off relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”
5. On the scale below, please indicate how much you think dragging a training dummy a distance of 15 feet as quickly as possible relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”
6. On the scale below, please indicate how much you think performing as many pushups in 60 seconds as possible relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”
7. On the scale below, please indicate how much you think performing as many situps in 60 seconds as possible relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”
8. On the scale below, please indicate how much you think running 1.5 miles relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”
9. On the scale below, please indicate how much you think climbing up and down stairs as quickly as possible relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”
10. On the scale below, please indicate how much you think pushing an object weighing up to 90 pounds as quickly as possible relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”
11. On the scale below, please indicate how much you think moving over, under, or around obstacles as quickly as possible relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”

On the scale below, please indicate how much you think sprinting up to 300 meters and then lifting/restraining a training dummy as quickly as possible relates to your current job duties. On the scale, an answer of 1 means “Not at all representative of my current job duties” and a 7 means “Very representative of my current job duties.”

APPENDIX D: Aggregate responses to the physical activity survey







APPENDIX E: Detailed comparison of ADOC candidates to ADOC corrections officers

Sample Sizes

- Trainees:
 - Men = 37
 - Women = 3
- Incumbents:
 - Men = 91
 - Women = 13

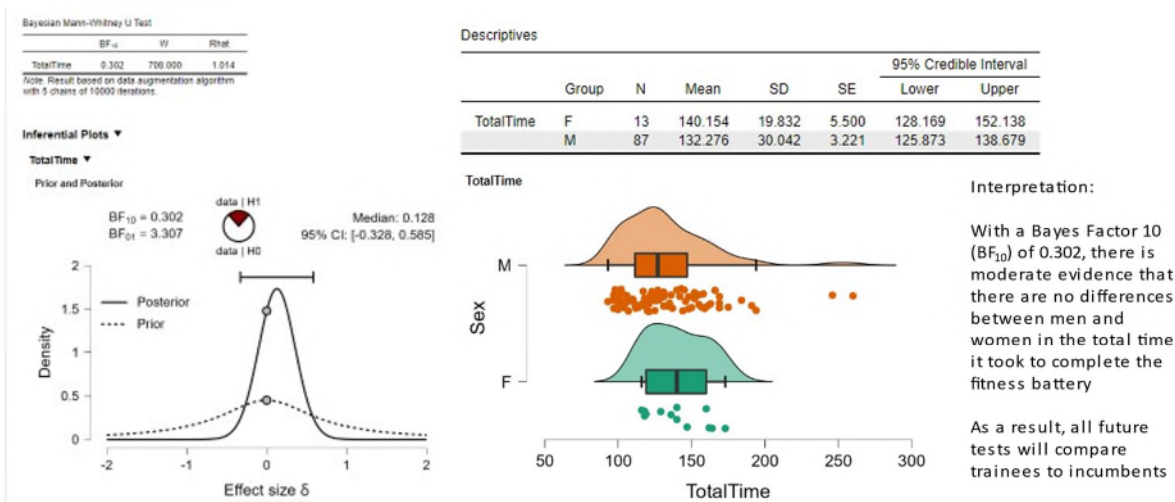
Note on Statistics

- Since we were told to examine possible differences between men and women on performance in the fitness battery, and due to the large difference in the group sizes, the following statistics were used:
 - Mann-Whitney U Test
 - Accounts for non-normality of data, discrepant sample sizes
 - Allows for random resampling from the larger group to arrive at a more robust answer
 - 5 rounds of 10,000 random samples
 - Bayesian Inference
 - Gives us a probability range for likely effects instead of a yes/no single point value

Data Cleaning

- Removed participants who either:
 - Did not complete the 300m Sprint (n=2)
 - Did not complete the Obstacle Course (n=2)
- Final Sample Size for Incumbents:
 - Men = 87
 - Women = 13
- Sex differences examined based on total time for fitness battery
 - Obstacle course time + sprint time + (10s- time dummy held)

Results



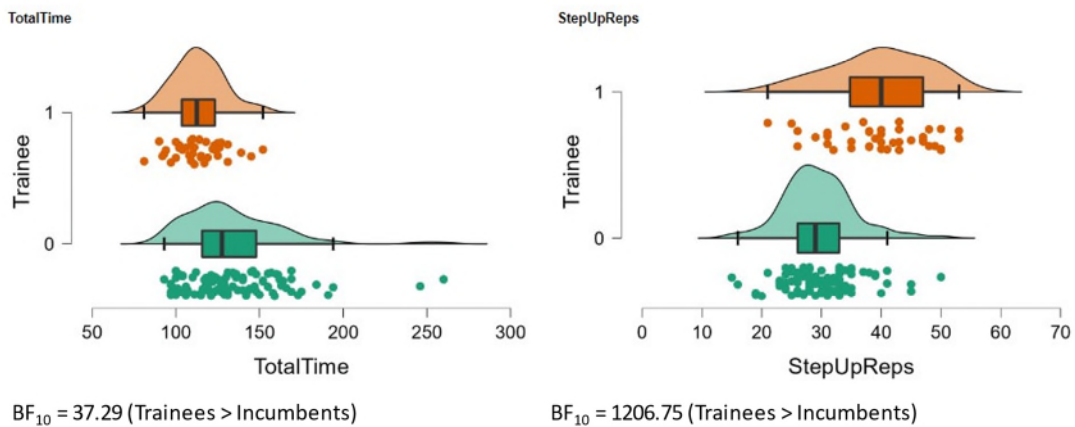
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Trainees vs. Incumbents

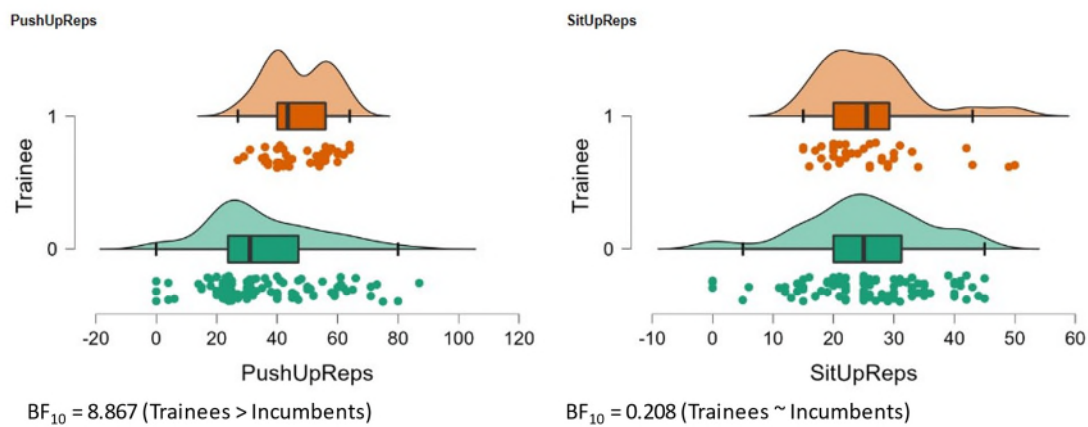
Descriptive Statistics ▼

	YearsInJob		ObstacleTime		Sprint300m		TotalTime		StepUpReps		PushUpReps		SitUpReps	
	0	1	0	1	0	1	0	1	0	1	0	1	0	1
Valid	100	40	100	40	100	40	100	40	100	40	100	40	100	40
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean	9.012	0.000	53.890	52.150	79.050	61.425	133.300	113.575	29.550	39.650	35.430	46.775	25.260	26.125
Std. Deviation	4.823	0.000	11.558	6.967	19.253	9.405	28.962	15.037	5.871	8.123	18.374	10.277	10.188	8.401
Minimum	0.660	0.000	38.000	36.000	51.000	45.000	93.000	81.000	15.000	21.000	0.000	27.000	0.000	15.000
Maximum	25.000	0.000	113.000	70.000	162.000	89.000	260.000	152.000	50.000	53.000	87.000	64.000	45.000	50.000

Trainees vs. Incumbents



Trainees vs. Incumbents



Other Results

• Relationships

- More time in the job = more time to complete the fitness battery
 - Expected due to age
- Step ups, push ups, sit ups inversely related to time to complete battery
 - More time = fewer sit ups, push ups, step ups
 - Indicate overall markers of physical fitness

APPENDIX F: Scoring Sheet for Proposed Fitness Battery

AL Dept of Corrections Fitness Assessment Score Sheet

Candidate: _____

Date: _____

Candidate Sex (circle one): M F

Test 1: Modified Agility Test

Obstacle Completion:	Yes	No
• Sled Push	_____	_____
• Obstacle Over/Under	_____	_____
• Balance Beam	_____	_____
• Weight Drag	_____	_____

Total Time Elapsed: _____ min _____ sec

Test 2: Sprint and Hold Test

300m Sprint Time: _____ min _____ sec

Hold Completion (verbal tap out = no):	Yes	No
	_____	_____

Hold Time (up to 10 seconds): _____ sec

Total Time (Sprint Time + Time not held) _____ min _____ sec

Total Time to complete Agility Test + Sprint and Hold: _____ min _____ sec

Test 3: Step Up Test

Total Repetitions _____ Reps

Test 4: Push Up Test

Total Repetitions _____ Reps

Test 5: Sit Up Test

Total Repetitions _____ Reps