Request For Information (RFI) #6
Physical Fitness Programs

AF Exercise Science Unit
Exercise Physiology Consultant HQ AF
AFPC/DSYX
Joint Base San Antonio Randolph, TX
19 Mar 2018
AF Physical Fitness Training: Goal // Intent, Program?

**Overall goal** - not necessarily to prepare for the test, rather maintain consistent physical training behavior to:

- Reap health benefits / maintain activity-based health and fitness (T1)
- Meet occupationally-specific, operationally-relevant requirements (T2)

**Commanders Intent** (AF Instruction 36-2905, *Fitness Program*, 21 October 2013)

- “It is every Airman’s responsibility to maintain the standards set forth in this AF Instruction 365 days a year”
- “Being physically fit allows you to properly support the AF mission
- “The goal of the Fitness Program (FP) is to motivate all members to participate in a year-round physical conditioning program that emphasizes total fitness, to include proper aerobic conditioning, muscular fitness training, and healthy eating”
- An active lifestyle will increase productivity, optimize health, and decrease absenteeism while maintaining a higher level of readiness
Commanders and supervisors must incorporate fitness into the AF culture establishing an environment for members to maintain physical fitness (PF) and health to meet expeditionary mission requirements.

PF Test provides commanders with a tool to assist in the determination of overall fitness of their military personnel.

Commander driven PF training is the backbone of the AF Fitness Program and an integral part of mission requirements.

Program promotes aerobic and muscular fitness, flexibility, and optimal body composition of each member in the unit.”

Unit Physical Training (PT) programs will encourage Airmen to participate in PF training for up to 90 minutes, 3-5 times per week. Consistent with mission requirements, commanders are encouraged to schedule or authorize Airmen time to participate in PF training during the duty day.

Debate: Individual Member Responsibility vs Unit / Commander / Service Responsibility // Encouraged vs Mandatory
RFI #6a – AF PF Resources

a. What is your PF training program to prepare Service members for physical fitness tests?

- **Required**: If fail PF Test (Unsat), mandatory AF PF program
  - Airman and Commander select one of these to meet needs:
    - “Fitness Improvement Program” on-line (formerly “Be Well”)
      - Educates members on fitness, nutrition and dietary supplement safety
      - Surgeon General developed 2012, computer based training / high use, minimal effect
    - “Military OneSource Health Coaching”
      - Weight management, fitness and nutrition, living well with a health condition, stress management, and life transitions (lifestyle change)
      - Coaching sessions via telephone or online / low use, unknown effect
- **Resources** (that have a physical aspect):
  - “Better Body Better Life” - available at a few bases
    - Focus on weight loss and healthy lifestyle, classroom sessions on nutrition, behavioral change, physical activity
    - Developed 2012, taught by former Health and Wellness Center (HAWC); however HAWCs disbanded, not AF-wide/limited locations, unknown effect
Resources (cont’d):

“Health Promotion’s Health and Readiness Optimization”
- Uses Preventive Health Assessment data; targets negative health behaviors
- Education campaigns on physical activity, sleep, nutrition, tobacco-free
- 2018 start at ten sites; new AF-wide health promotion, unknown effect

“Base Operational Support Team” - at one base
- Improve member and squadron performance, focus on illness and injury
- 2018; local med service team of physical therapist, psychologist, dietitian, exercise physiologist rotate through and in base units, proactive vs reactive

Unit PF Resources: led by unit personnel (varied backgrounds)
- Disparate, highly variable
- Vulnerable to exercise fads, commander or unit PT Leader personal favorites
- Inconsistent
b. Does your physical fitness training program incorporate the science on physiological gender differences?
   - Addressed in following slides

c. How is your physical fitness training program administered and communicated to Service members?
   - Addressed in preceding slides

d. Is the physical fitness training program mandatory? If so, how are commands implementing and tracking effectiveness?
   - Yes, but only for Unsat / No for all other Airmen

e. Do you have a special rate/designation for fitness trainers? If so, what are their responsibilities?
   - No
AF Way Ahead

- Education: not a panacea, but a necessary element along with...
- Science-based principles and procedures/methods - focus on PF
- Some level of “guard-rails” - commonality and standardization across military timeline
- Leadership engagement
  - Accountability (Results > Currency)
  - Policy - achieve culture without tools and mandate?
- Education, Marketing, Communication (EMC) - all important “EMC”
- Account for sex differences in training
- Exercise Science Unit actions and plans:
  - Tier 1 and Tier 2 testing
  - Research and Development to include Tier 1D
  - Force Generation-Force Sustainment Human Weapon System Life Cycle
  - Exercise Principles and Methods Train-the-Trainer Course
Females may require a more focused, consistent, periodized training program than males to reach the same occupationally specific and operationally relevant (OSOR) physical standard, for cardiorespiratory endurance (CRE), body composition (BC), muscular fitness (MF).

Example, females generally need to achieve greater improvements in CRE, MF to reach the same absolute load carriage capability.
Females < VO₂ max, < fat-free mass, < muscular strength, < peak bone mass, < heat tolerance, > relative fat mass, > use fat stores, > protein catabolism, > Quadriceps femoral angle and posterior chain weakness

Sex-specific technique differences

- Stability exercises core/pelvic girdle, e.g., plank, single leg squat
- Strengthen posterior chain, e.g., deadlift variations, hamstring curls, single leg hip thrusts, squats with glute involvement, lunges
- Landing techniques, e.g., depth jump, box jumps
- Plyometric and agility drills - after achieving MF gains
- Mobility assessments - address potential weaknesses / injury risk
- Nutritional education / consults
- Heat acclimation / fluid replacement
Right Focus - PF Components

U.S. AIR FORCE

- Programs above: not PF focused, failed “weight loss” approach

- Component hierarchy
  - Aerobic fitness primary component for Tier 1 and Tier 2:
    - Tier 1 Health - compelling research data show aerobic fitness:
      - Provides risk protection not by reducing body mass per se, but by reducing visceral adipose tissue (VAT), subcutaneous adipose tissue (SAT), and total abdominal fat - “Aerobic Protection”
      - Mitigates elevated health risk associated with increases in VAT
    - Tier 2 Performance - occupations, operations, deployment

- Abdominal fat next most important for health (T1)
- MF (esp. core) next most important for performance (T2)

- Component linkage
  - Aerobic fitness and BC are inextricably linked; feedback loop
  - For long term health benefits we should focus on improving fitness by increasing physical activity rather than relying solely on diet for fat (“weight”) control

Fit and Lean > Fit and Fat > Unfit and Thin > Unfit and Fat

Integrity - Service - Excellence
AF PF Program

Employ *AF Exercise Principles and Methods Course* (EPM)
- Proactive program - science-based exercise training course (since ‘07)
- Includes sex-specific training methods/techniques
- 50/50 mix of academic and practical
- Graduation requirement: develop real time physical training plan
- Train-the-Trainer concept; replace current computer training platform

*EPM-Basic/Tier 1* general application across all career fields
- All AF units, and Basic Military Training/Officer Training School, Reserve Officer Training Corps, United States Air Force Academy, Technical Training, Professional Military Education, Senior Leadership Courses
• EPM-Basic/Tier 2 OSOR focus on specific career field
  - Tactical Air Control Party, Explosive Ordnance Disposal, Security Forces, Fire Emergency Services, others

• EPM-Advanced for human performance physiologists, coaches, instructors; reduce disparity across personnel and units