

# **PRE-CONSUMPTION CONDITIONING PROGRAM**

**STANDARD OPERATING  
PROCEDURES (SOP)**

# **SUMMARY**



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**Pre-Consumption Physical Training Program**  
**Standard Operating Procedures**

This document outlines a 21-day structured physical conditioning program for fire service recruits in Alabama. Its core purpose is to reduce the elevated incidence of adverse medical events, including exertional rhabdomyolysis, cardiovascular events, and heat illness — that disproportionately occur at the onset of recruit school when detrained individuals are abruptly exposed to high-stress physical training. Rather than immediate high-intensity exposure, the program functions as a progressive physiological "on-ramp" designed to build baseline fitness, identify at-risk recruits early, and ensure a safe transition into consumption (live-fire) training. All Alabama fire training facilities can implement this program, as it requires minimal equipment.

**Phase I (Day 1) – General Fitness Screening & Risk Stratification**

On the first day of training, recruits undergo a four-part fitness screening battery administered in a fixed order:

1. **Body Composition** – BMI and waist circumference are measured and interpreted together to assess cardiometabolic risk. Risk scores range from 0–5 based on combined thresholds (e.g., BMI  $\geq 35$  with elevated waist circumference scores a 5).
2. **Push-Up Test (1 minute)** – Evaluates upper-body muscular endurance. Scores are compared to age- and sex-adjusted percentile norms; below the 50th percentile adds 1 risk point.
3. **Prone Plank Hold** – Assesses trunk/core muscular endurance and spinal stability. Same scoring structure as the push-up test (0 or 1 point).
4. **1.5-Mile Run/Walk** – The primary aerobic fitness measure. Scored on a three-tier scale: at or above the 50th percentile (0 points), 20th–49th percentile (2 points), or below the 20th percentile (4 points).

Individual scores are summed into a **Total Risk Score** (0–11), which places recruits into one of three tiers:

- **Tier 1 (0–2):** Cleared for full participation
- **Tier 2 (3–5):** Elevated risk; increased instructor monitoring
- **Tier 3 (6–11):** High risk; medical evaluation recommended, possible deferral

Regardless of score, any recruit displaying abnormal signs or symptoms during testing (chest pain, dizziness, confusion) is immediately removed and referred for medical evaluation. The screening is explicitly non-punitive and does not permanently disqualify a recruit.

## Phase II (Days 2–12) – General Conditioning & Physiological Acclimation

This phase provides 11 days of structured, submaximal conditioning to build aerobic capacity, muscular endurance, and connective tissue tolerance before higher-intensity work is introduced. High-intensity interval training and sprinting are intentionally excluded. Training intensity is self-regulated using the Rating of Perceived Exertion (RPE) scale, with recruits targeting an RPE of approximately 6/10.

Two alternating workout formats are used:

- **Workout A (Muscular Conditioning):** A 5-exercise circuit (lower body, upper body push, upper body pull, core, rest) performed for 1 minute per station, repeated 3–4 times, for a 15–20 minute session.
- **Workout B (Aerobic Conditioning):** 30–45 minutes of brisk walking, easy jogging, or walk/jog intervals at RPE 6/10.

Days 6–7 are designated active recovery days emphasizing light movement and hydration. During Week 2 (Days 8–12), recruits progressively add turnout gear — beginning with helmet, gloves, and boots and building to the full ensemble including air pack by Day 12 — to begin heat and movement acclimation without additional weight-bearing loads. Phase II also serves as a secondary screening period, where instructors monitor recruits across multiple sessions for poor exercise tolerance or abnormal physiological responses not apparent during Day 1 testing.

## Phase III (Days 13–15) – Anaerobic Readiness Assessment

Following two planned recovery days (Days 13–14), recruits complete the Running-Based Anaerobic Sprint Test (RAST) on Day 15. The RAST consists of six all-out 35-meter sprints with only 10 seconds of rest between each sprint. Times are recorded and converted to power output (watts/kg of body weight) using a standardized formula. The mean power across all six sprints is calculated and used to classify recruits:

- **Category A:** Full participation cleared
- **Category B:** Elevated monitoring of recovery and pacing
- **Category C:** Heightened observation; possible recommendation for deferral

The justification for this assessment is grounded in internal Alabama Fire College data showing that recruits with lower anaerobic power had substantially higher rates of training attrition, injury, and program failure. The RAST serves as a field-practical substitute for the laboratory-based Wingate test and is used to guide monitoring decisions — not to exclude recruits from continued training.

#### **Phase IV (Days 16–21) – Transition to Consumption-Specific Training**

Phase IV bridges general conditioning and full live-fire/SCBA-based training by introducing recruits to firefighting task patterns in a controlled, progressive format. Recruits wear full turnout gear (without SCBA) during the primary drill component to promote heat acclimation under occupational conditions.

Training follows a progressively longer work-to-rest structure across four days:

- **Day 16:** 1 minute on / 1 minute rest (10 total work bouts)
- **Day 17:** 2 minutes on / 2 minutes rest
- **Day 18:** 5 minutes on / 5 minutes rest
- **Day 19:** 10 minutes on / 10 minutes rest

Drill tasks may include chops, tire pulls, bear crawls, tower climbs, tire drags, and equipment carry courses, with specific task selection left to instructor discretion. A secondary conditioning block, performed in standard PT gear to allow heat recovery, follows each primary session, alternating between aerobic conditioning (Days 16 & 18) and muscular conditioning (Days 17 & 19). Days 20–21 are recovery days before full consumption drills begin in Week 4.

RAST classifications from Phase III inform instructor oversight throughout Phase IV: Category A recruits proceed normally, Category B recruits receive increased monitoring, and Category C recruits are observed closely with discretion to limit more strenuous efforts, though classification alone does not exclude any recruit from participation. All modifications must be documented in the recruit's training record.