



Fire Fit Conference

The complexity of “simple” cases
Is fit for work fit for testing

Dr S Chambers



Purpose

- To demonstrate two apparently “simple” cases and the problems that can be encountered
- To provide practical advice for managing these types of cases
- To encourage review of fitness testing processes

Case 1

Scenario

- 28 year old fire-fighter. 10 years service. National level triathlete. BMI – 25, BP- 120/80, cholesterol - 4.5
- Diagnosed with diabetes mellitus type 1 less than 12 months previously and controlling diabetes with long acting insulin treatment and regular short acting insulin injections adjusted with food. He self regulates his insulin and is gaining excellent control with great understanding of his condition. He has had no hypoglycaemic episodes.
- He attends his specialist for 3 monthly reviews and HBA1C shows excellent control at 7.2 with blood sugars between 6-8. He has no signs of eye, vascular or nerve issues which are complications of diabetes.

Is this fire-fighter fit for operational duties?

- Yes vs No

Medical standards

Medical and Occupational Evidence for Recruitment and Retention in the Fire and Rescue Service (2004)

- People should be physically and mentally fit in accordance with non-diabetic standards
- Diabetes should be under regular (at least annual) specialist review
- Diabetes should be under stable control
- Diabetic persons should monitor their blood glucose and be well educated and motivated in diabetes self-care
- There should be no disabling hypoglycaemia and normal awareness of individual hypoglycaemic symptoms
- There should be no advanced retinopathy or nephropathy, nor severe peripheral or autonomic neuropathy
- There should be no significant coronary heart disease, peripheral vascular disease or cerebrovascular disease
- Suitability for employment should be re-assessed annually by both an occupational and diabetes specialist physician, and should be based on the above criteria.

My Practice

- Detailed history and assessment
- Report from specialist
- Clear evidence of motivation and knowledge
- Hypoglycaemic awareness
- Control below 8.5 on HBA1C
- Documented evidence of BS – control between 6-12 on duty
- Risk assessment involving management/HR/H&S if appropriate
- Check 3/12 then 6/12 then annually with report from specialist detailing HBA1C
- Hypo - stop on the truck
- Encourage individual to make colleagues aware with support in awareness from OH

Fitness test scenario

- Individual attends for his first fitness test following rtw after being diagnosed with type 1 diabetes.
- He arrives directly from a shout and details that he is on insulin for his diabetes on his pre-participation questionnaire
- He looks well and BP is 120/80

Should we undertake a fitness test in this fire-fighter?

- Yes vs No

If so is there anything else you would do?

Outcome?

- Patient was 5 minutes into his test when he detailed that he was feeling unwell and light headed. He began to look pale and was excessively sweaty.
- He became disorientated and the test was stopped.
- His blood sugar was checked and he had a BS of 3.0.
- Hypo-stop was given and the patient recovered quickly

Issues to consider in this case

- What test should we do – maximal vs sub-maximal?
- Where should we test – fire station vs medical centre
- Do you have a wellbeing policy and does it cover this type of scenario?
- Do you have a fitness testing procedure and does it cover this type of scenario?
- What is the process for a positive pre test questionnaire?
- Should we check BS in diabetics pre test?
- Do you check that exercise not done before test?
- What emergency medication/procedures are in place?
- Are people trained and sufficient numbers present?
- Is the individual fit to go back to operational duties?
- How do you decide and what access to support is required?
- What do you do next?

Case 2

Scenario

- 45 year old fire-fighter. 20 years service. BMI – 30, BP- 140/80, cholesterol – 5.2, ex smoker
- Developed acute episode of chest pain with radiation of pain down the left arm and into his jaw. Admitted to hospital and diagnosed with myocardial infarction.
- Angiogram undertaken and showed occlusion to single artery and had angioplasty and stent.
- Discharged after 5 days and underwent 6 week cardiac rehabilitation and had normal exercise ECG to stage 3 on Bruce protocol when undertaken at 10 weeks post MI.
- He is seen at 12 weeks and is asymptomatic and wishes to return to work in full operational duties

Is this fire-fighter fit for operational duties?

- Yes vs No

Medical standards

Medical and Occupational Evidence for Recruitment and Retention in the Fire and Rescue Service (2004)

- In general, decisions on employment will need to consider the risk of work precipitating ill-health, the risk of sudden incapacity to the individual, colleagues and the public, and the impact of symptoms on the ability to work.
- Any decisions should be made with input from a cardiologist, and regular review should be a core part of individual risk management
- In asymptomatic individuals already in service, full post-infarction assessment, including stress testing is required. A negative stress test should include no symptoms, no significant ST changes and the individual should have completed Stage III (at least 9 minutes) of the Bruce Protocol with no anti-anginal therapy. Any doubt about the stress test should lead to angiography.

My Practice

- Detailed history and assessment
- Report from specialist supporting rtw and confirming no complications
- Exercise ECG that meets stage 3 of Bruce protocol
- Controlled BP, BMI below 35, Cholesterol well controlled and asymptomatic
- Risk assessment involving management/HR/H&S if appropriate
- Recovery programme with progressive ramp up of activity culminating in BA/RTC/Fire ground scenarios
- Check 3/12 then 6/12 then annually
- Three yearly exercise ECG in line with DVLA

Fitness test scenario

- Individual attends for their third fitness test following rtw after having MI.
- He looks well and is asymptomatic
- His BP is 145/90, BMI is now 32, cholesterol 5.4, admits to occasional cigarettes and reduced physical activity

Should we undertake a fitness test in this fire-fighter?

- Yes vs No

If so is there anything else you would do?

Outcome?

- Patient was 5 minutes into his test when he detailed that he was developing chest pain. He began to look pale and was excessively sweaty.
- Test was stopped but he continued with chest pain and was taken to hospital and diagnosed with angina

Issues to consider in this case

- **Is fit for work - fit for testing?**
- **How do you protect the individual and yourself?**

- What test should we do – maximal vs sub-maximal?
- Where should we test – fire station vs medical centre?
- How do you monitor test – visual exertion scale, pulse meter, BP recording?
- Should OHN/OHP be present
- What emergency medication/procedures are in place?
- Is a defibrillator available?
- Are people trained and sufficient numbers present?
- What do you do next?
- Do you have a fitness test procedure and does it need review?