

Safety Alert

Mines Inspectorate—All mines

Safety Alert No. 285 | 31 January 2012

Inappropriate use of pre-workout supplements

What happened?

Improper use of a pre-workout supplement at a coal mine has caused concern. Allegedly, mineworkers were using the supplement **Jack3d** on shift to manage fatigue, instead of methods mandated by the mine's fitness provisions.

Jack3d contains two stimulants, **caffeine** and **methylhexaneamine** (also known as **dimethylamylamine**). Methylhexaneamine has been listed by the World Anti-Doping Agency as an S6 stimulant 'prohibited in competition'. Jack3d is marketed to improve athletic performance and is popular as a pre-workout supplement.

Supplements such as Jack3d:

- increase the heart's output and can increase blood pressure
- increase the risk of dehydration by increasing urine output, at the same time increasing the body's internal heat load resulting in a high risk of workers suffering serious heat illnesses when working in heat (Refer to *Mines Safety Bulletin 115 - risk of heat exposure in mining*)
- may cause an inability to sleep if taken in excess or late in a shift
- combined with pre-existing medical conditions such as high blood pressure or a heart condition, may result in more serious medical problems. (Particular care is needed if other stimulant 'soft drinks' are consumed at the same time, as the effects can be additive.)
- may not disclose the amounts of caffeine and methylhexaneamine in the recommended dose, therefore caution must be exercised if using these products.

Recommendations

1. The Safety and Health Management System at coal mines must provide for controlling risks at the mine associated with personal fatigue and the improper use of drugs.
2. Fitness provisions must be developed in consultation with mine workers.
3. Appropriate fitness provisions to prevent fatigue should be enforced including:
 - working no more than the mandated maximum number of hours for a working shift
 - resting for the appropriate number and length of breaks in a shift
 - not exceeding the maximum number of hours to be worked in a week or roster cycle.
4. Proper diligence must be applied when identifying, assessing and analysing the improper use of drugs (and substances).
5. A risk assessment should be conducted to see if the substance can be controlled at an acceptable level of risk. Stopping use of the substance may be an option to reduce the risk to an acceptable level.
6. A doctor should be consulted before taking any supplements.

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