

Night Work

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A longitudinal study of the influence of shift work on serum uric acid levels in workers at a telecommunications company

In our view, shift work will not feature as a significant cause of gout. Gout affects around 5% of men aged over 60.

Gout occurs when excess uric acid (a normal waste product) accumulates in the body, and crystals deposit in the joints. This may happen either because uric acid production increases or, more often, because the kidneys are unable to adequately remove uric acid from the body. Certain foods, such as shellfish and alcohol, may increase uric acid levels and lead to gout attacks. Gout afflicts about 1 in 100 people in the US and 1 in 200 in the UK, usually becoming evident between ages 40 and 60, and in as many as 6 – 7 percent of older men. Gout and its complications occur more often in men, in women after menopause, and in people with kidney disease. Gout is strongly associated with obesity, hypertension, hyperlipidemia and diabetes. It is treatable but if left untreated can result in loss of articulation in joints.

Night shift work has been associated with lifestyle choices such as excess alcohol consumption and eating fatty foods (though some studies fail to confirm this). It would seem likely therefore that night shift workers would be at increased risk of gout. Risk is related to uric acid (UA) levels.

The study followed men and women for an average of 2 years following baseline assessment of body mass index, lifestyle factors, blood analysis. All members of the cohort had annual health checks and repeated blood samples. 12,246 men and 3,625 women aged between 40 and 54 (inclusive) took part. 1,233 of these were shift workers.

In the first observed year, 584 male subjects and 111 female subjects developed increased serum UA i.e. $\geq 8\text{mg/dl}$ in males and $\geq 6\text{mg/dl}$ in females. Risk factors for this increase (after adjusting for age) were BMI, shift work (men only) and alcohol consumption more than 5 times per week (by far the strongest risk factor).

Comment

The issues are much the same as those for obesity. Gout is probably a result of lifestyle choices but these can be strongly influenced by work organisation. Causation would be unlikely to affect liability insurance but secondary effects, such as failure to adapt systems of work, could be problematic especially if Official guidance is issued.

Occupational physicians would be expected to encounter cases of gout quite often; it certainly would affect mobility at work.

Alcohol consumption was the strongest risk factor for high UA levels. In this Japanese population, 29% of men over 40 consumed alcohol more than 5 times per week.

In our view, shift work was a very weak risk factor for high UA levels.