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Summary

EVALUATION OF THE LONG-TERM EFFECTS OF NIGHT SHIFT WORK IN UNSUCCESSFUL WEIGHT MANAGEMENT AND REDUCING CARDIOVASCULAR RISK

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Night shift workers showed significantly higher baseline insulin levels, lower heart rate variability ratios, and markers of relative tissue hypoxia compared to matched controls, suggesting metabolic and autonomic dysfunction that the authors propose may explain weight loss resistance and cardiovascular risk.

KEY POINTS

- Night shift employees (n=24) had significantly higher baseline insulin (10.17±5.06) compared to mothers (5.4±3.43, p=0.001) and children controls (9.0±4.13, p=0.003), despite normal glucose tolerance test results at 90 minutes.
- The night shift group demonstrated a significantly lower LF/HF heart rate variability ratio (0.74±0.23) compared to mothers (1.2±0.54, p=0.025), indicating reduced autonomic nervous system function that the authors suggest could be a marker for physical overload.
- Venous lactate at 120 minutes post-glucose load was significantly elevated in night shift workers (1.51±0.19) and children (1.56±0.43) versus mothers (1.37±0.52), with all groups above reference values, alongside lower venous oxygen pressure suggesting relative tissue hypoxia and anaerobic metabolism.
- The authors propose that the combination of elevated insulin and relative hypoxia represents a pathophysiological link between skeletal muscle and adipose tissue that may explain unsuccessful weight loss and increased cardiovascular morbidity in night shift workers, and recommend regular meals during night shifts to improve diet effectiveness.
- This observational study may interest occupational health professionals and clinicians managing metabolic disorders in shift workers, with the authors planning long-term follow-up to validate these parameters as health risk markers.

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