



## Night eating syndrome: Evaluation of two screening instruments

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### Abstract

The purpose of the present study was to determine whether night eating syndrome was associated with treatment outcomes during a brief weight loss intervention for self-identified night snackers, and to evaluate the diagnostic utility of a screening question and the Night Eating Syndrome Questionnaire (NESQ) for the detection of night eating syndrome.

Participants enrolled in a 4-week randomized clinical trial for obese and overweight persons who self-identified as night snackers were administered a structured clinical interview, a night eating screening question, and the NESQ. Treatment outcomes included adherence and weight loss. Results showed that night eating syndrome diagnoses were not associated with treatment outcomes. The screening question had adequate sensitivity but poor specificity. The night eating questionnaire was positively correlated with increasingly stringent definitions of night eating syndrome. Night eating syndrome is not the equivalent of night snacking. The definition of night eating syndrome must be expanded to include a sleep disturbance component accompanied by night eating.

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### 1. Introduction

Over half of adults in the United States are overweight (54.3%) and nearly one in five (19.1%) are obese (United States Department of Health and Human Services [USDHHS], 2001a). Both overweight and obesity are risk factors for a variety of chronic health conditions, including heart disease, high blood

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pressure, diabetes mellitus, arthritis-related disabilities, and some cancers (USDHHS, 2001a, 2001b). The estimated health care cost of overweight and obesity in the United States is US\$100 billion per year (USDHHS, 2001b).

Contributing to the incidence of overweight and obesity in the United States is night eating syndrome. First described by Stunkard, Grace, and Wolff (1955), night eating syndrome is characterized by morning anorexia, evening hyperphagia, insomnia, and emotional distress. The criteria were later modified to specify that greater than 50% of calories should be consumed after 7 p.m. (Stunkard et al., 1996). The disorder occurs predominantly among obese individuals, during periods of stress, and tends to remit if stress is alleviated (Stunkard, 2002). The prevalence of night eating syndrome in some obese populations has been documented, including 8.9% in an obesity clinic, 13.7% in a community sample, and 15% in a sample diagnosed with binge eating disorder (Stunkard et al., 1996). Among the severely obese, prevalence rates of 26% (Rand, Macgregor, & Stunkard, 1997) and 27% (Rand & Kuldau, 1993) have been reported. Among patients presenting for bariatric surgery, 10% met diagnostic criteria for night eating syndrome in one study (Powers, Perez, Boyd, & Rosemurgy, 1999) and 42% met diagnostic criteria in another study (Hsu, Betancourt, & Sullivan, 1996).

Various diagnostic criteria have been developed for night eating syndrome. A summary of the variations in diagnostic criteria according to study are provided in Table 1. The symptom common to all definitions involves overeating during the evening hours, although the specific amount eaten and the time frame during which food is eaten differs across studies. All but one study included the criterion of lacking an appetite in the morning. Sleep problems, including difficulties in sleep onset, sleep maintenance, and insomnia, were also present in the majority of studies reviewed. Finally, a criterion regarding the presence of emotional distress was present in fewer than half of the studies reviewed. From these studies, inconsistency about the definition of night eating syndrome is apparent.

The diagnostic utility of night eating syndrome is unknown. However, the literature on the association between binge eating disorder and weight loss treatment outcomes may offer insight because binge eating disorder shares many similarities with night eating syndrome. Although both disorders involve consuming objectively large amounts of food, the timing of consumption differs.

Table 1  
Variations in diagnostic criteria according to different studies

Study	Diagnostic criteria
Birketvedt et al., 1999	Morning anorexia, evening overeating, insomnia, 50% of daily food intake after 6 p.m.
American Sleep Disorders Association, 1990	Rapid binge eating occurring either before sleep onset or immediately after waking
Kuldau & Rand, 1986	Waking with little or no appetite; not eating until later in the day; periodic evening eating without enjoyment; feeling tense, upset or anxious as bedtime nears; difficulty going to sleep
Napolitano et al., 2001	Eating 50% or more of calories in the evening, after 7 p.m.; lack of an appetite in the morning
Powers et al., 1999	Eating 25% of calories after the evening meal, difficulty sleeping, lack of appetite in the morning
Rand & Kuldau, 1993	Eating during the evening without enjoyment, feeling tense or upset, difficulty sleeping, little appetite upon awakening, delay of eating until later in the day
Rand et al., 1997	For 2 months: excessive evening eating, evening tension and/or feeling upset, insomnia, waking with little or no appetite, not eating until later in the day
Stunkard et al., 1955	Morning anorexia, evening hyperphagia, emotional distress, insomnia
Stunkard et al., 1996	No appetite for breakfast, 50% or more of food after 7 p.m., trouble getting to or staying asleep

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