

Keeping Cool: How to Approach Night Sweats



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Q & A *How are night sweats defined?*

Nights sweats are variably defined in medical literature and clinical practice. Epidemiologists are likely to use a strict definition such as “drenching sweats that require the patient to change their bedclothes.” Whereas patients may refer to any increase in nocturnal sweating.

Q & A *How prevalent are night sweats?*

The literature on night sweats is sparse and influenced by the:

- population under consideration,
- period of observation and
- definition used.

For example, 60% of obstetrical patients recalled having night sweats in the three months prior to being surveyed, whereas 10% of seniors recalled this symptom in the prior month. Among 2,267 patients in the primary care setting, 41% recalled having night sweats (defined as sweating at night even when it was not excessively hot in their bedrooms) within the last month. Only 12% had reported their night sweats to their physicians prior to being surveyed.

Gerald's case

Gerald, 55, complains of drenching night sweats of 2 months duration. They occur on most nights and result in him having to change his bed clothes.

Medical history

Gerald's past medical history includes:

- hypertension,
- diabetes and
- depression.

His medications include:

- enalapril,
- metformin,
- low-dose acetylsalicylic acid (ASA),
- ibuprofen and
- fluvoxamine.

Examination

An examination reveals that Gerald consumes 500 ml of red wine on most evenings and that he:

- is obese (BMI 38),
- has a BP of 150/90 mmHg,
- has a fourth heart sound and
- has osteoarthritis of the knees.

For the conclusion to Gerald's case, turn to page 77.



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Table 1

Commonly reported causes of night sweats

Malignancy

- Arising from bone marrow (e.g., lymphoma, leukemia, myeloma)
- Other cancers (e.g., prostate, renal, lung, breast, ovary, testicle)

Infection

- Parasitic infections (e.g., malaria, toxoplasmosis)
- Bacterial and mycobacterial infections (e.g., endocarditis, osteomyelitis, abscess)
- Viral infections (e.g., HIV, Epstein-Barr Virus, hepatitis)

Autoimmune disease

- Organ-specific inflammatory conditions (e.g., pneumonitis, nephritis, inflammatory bowel disease)
- Generalized inflammatory conditions (e.g., temporal arteritis and other vasculitis)

Ischemia

- Prinzmetal's angina and other coronary ischemias

Hypersensitivity

- Allergy to medication or other exposures

Drug effects or withdrawal

- Acetaminophen
- ASA
- Non-ASA NSAIDs
- Immune modulators or immunosuppressants (e.g., rituximab, interferon, cyclosporine)
- Anti-retroviral medications
- Psychotropic medications (e.g., antidepressants)
- Alcohol, opiate, or benzodiazepine withdrawal

Endocrine and metabolic conditions

- Hyperthyroidism
- Ovarian failure
- Diabetes and hypoglycemia
- Endocrine tumours (e.g., pheochromocytoma, carcinoid)

Conditions associated with obesity

- Obstructive sleep apnea
- Gastroesophageal reflux disease

Q & A *What causes night sweats?*

Sweating can be a response to thermoregulatory, emotional, or gustatory stimuli and the differential diagnosis of night sweats is broad and numerous. Setting aside the normal responses to a warm environment, stressful situation, spicy foods, or abnormality of the sweat glands (hyperhidrosis), the causes of night sweats and a fever of unknown origin are similar. It has been observed among patients with lymphoma that a small rise in temperature preceded the onset of their night sweats by < 30 minutes. Accordingly, it is attractive to think of night sweats as the thermoregulatory response to a subclinical febrile episode.

The literature on night sweats is sparse and influenced by the population under consideration, the period of observation and the definition used.

It is useful to categorize the numerous causes of night sweats (Table 1) according to underlying pathophysiology. Malignancy, infection, autoimmune disease, ischemia, hypersensitivity, drug effect and withdrawal along with endocrinopathy (including obesity and its association with gastroesophageal reflux and/or sleep apnea) will cover the vast majority of causes.

No studies appear to have observed patients with night sweats until their diagnostic conclusion.

Q *How should night sweats be worked up?*

Night sweats are a common and non-specific symptom that are frequently under-reported. The challenge lies in distinguishing patients with a serious condition requiring an intervention from those which can be managed more conservatively. Performing a thorough history and physical examination is unimpeachable advice. Additional clues may emerge that will permit one or more diagnostic hypotheses.

When the diagnosis is not apparent, it is prudent to re-focus the clinical evaluation on the findings associated with a short list of conditions that are: reasonably prevalent, may be clinically occult and for which an early diagnosis is highly desirable (Table 2).

There is no consensus regarding the para-clinical work-up of night sweats. Recommendations must be tempered by:

- local epidemiology,
- the values placed on risk avoidance and cost containment,
- patient expectations,
- availability of follow-up and
- other factors.

The recommendations below place a relatively high value on the early diagnosis of serious conditions, performing most of the work-up at the primary care level and low-risk investigations.

In the absence of a diagnostic hypothesis, consideration should be given to those investigations listed in Table 3.

Table 2

Conditions that are prevalent which may be clinically occult and for which early diagnosis is highly desirable

Infections

- Endocarditis and other bacteremia
- Liver abscess
- TB
- HIV

Malignant disease

- All (risk will vary according to patient factors)

Autoimmune diseases

- Temporal and Takayasu's arteritis
- Celiac disease
- Nephritis

Endocrine and metabolically important conditions

- Hyperthyroidism
- Hypoglycemia
- Hemochromatosis
- Pregnancy

Gerald's case cont'd...

The history and physical examination highlight a number of health concerns arising from Gerald's lifestyle. He is advised to eliminate alcohol consumption and receives advice regarding:

- a weight reducing diet,
- restriction of sodium intake and
- increasing physical activity.

A complete blood count, electrolyte panel, creatinine, urinalysis and thyroid stimulating hormone are ordered which are normal.

A hemoglobin A1c returns at 10%.


Two months later and 4 kg lighter, Gerald's night sweats have resolved.

Table 3

Investigations to consider when working-up night sweats without an apparent cause

- Complete blood count
- Erythrocyte sedimentation rate
- Electrolyte panel
- Calcium
- Creatinine
- Glucose
- Alanine aminotransferase
- Alkaline phosphatase
- Albumin
- Ferritin
- Serum electrophoresis
- Thyroid stimulating hormone
- Blood cultures
- Celiac disease serology
- Urinalysis
- Fecal occult blood testing
- According to risk status, investigate:
 - HIV
 - tuberculin
 - pregnancy
- Chest radiograph (after excluding pregnancy)
- Ultrasound of the abdomen and pelvis
- CT chest-abdomen-pelvis (consider risk of contrast allergy or nephropathy)
- Bone marrow aspiration and biopsy (typically done at the specialist level)

Sweating can be a response to thermoregulatory, emotional, or gustatory stimuli.

Among the many conditions associated with night sweats, the vast majority will become apparent within six to 12 months or be discovered during medication or lifestyle change. 

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