Lecture 23

Editing file

MED438
KING SAUD UNIVERSITY

PRIMARY HEALTHCARE TEAMWORK

Fatigue and Tiredness

Objectives:

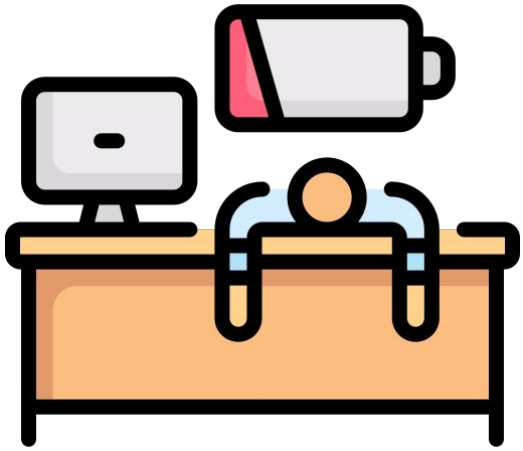
- ★ Define the meaning of fatigue vs. malaise vs. tiredness
- ★ Discuss the pathophysiology of fatigue and malaise
- ★ Discuss the common causes of fatigue and tiredness
- ★ Explain the diagnostic criteria of chronic fatigue syndrome
- ★ Understand the basic clinical approach to patient with fatigue

Color index:

Original text Important Doctor's notes Golden notes Extra

Introduction

Fatigue & Tiredness Overview



- Definitions of fatigue
- Causes of fatigue
- Common symptoms and signs with fatigue
- Chronic Fatigue Syndrome
- Management of fatigue
- Summary

Fatigue Definitions:

- Fatigue is an **unpleasant** symptom which **interferes** with individuals ability to function to their normal capacity.
- The European Association for Palliative: Fatigue is **a subjective feeling** of tiredness, weakness or lack of energy.

Epidemiology Of Fatigue

- It is one of the top 10 chief complaints leading to family practice.
- Fatigue occurs in up to 20% of patients seeking care.
- More in women than in men. (Women have lower totlance level)
- Psychiatric illness is present in 60 to 80% of patients with chronic fatigue.
    - The most common psychiatric disorders in patients with chronic fatigue is depression followed by anxiety followed by sleep disorders.

Two Types Of Fatigue

1. **Physical:** Prevents participation in activities and impedes activities of daily living.
2. **Cognitive:** Complicates activities such as reading, driving a car and thus prevents leisure activities & usually in psychiatric patients. (Fatigue could be mental, physical or both)

Fatigue Vs Tiredness

- Fatigue is a condition and a diagnosis whereas tiredness is a symptom.
- Fatigue is organic dysfunction and when more than 100% of the patients tolerance.
- Tiredness is one of the most common complaints of people seen in primary healthcare.
    - **Asthenia** is muscle tiredness.

Fatigue Symptoms:

1. Difficulty or inability to initiate activity (subjective sense of weakness)
2. Reduced capacity to maintain activity (easy fatigability) (Common in myasthenia gravis)
3. Difficulty with concentration, memory, and emotional stability (mental fatigue).

Fatigue & Tiredness

Classification Of Fatigue:

- Recent-Acute (less than one month). (Usually benign)
- Prolonged-Subacute (more than one month till 6 months).
- Chronic (over six months). (Usually serious or associated with a chronic disease)

Acute Fatigue:

1. Occurs within short duration. (Less than 4 weeks)
2. It's usually results sleep loss or from short periods of heavy physical or mental work.
3. It can be reversed by sleep and relaxation.
4. Usually caused by simple non serious problem like stress (Most common), sleep deprivation and/or missing meals.

Chronic Fatigue Syndrome (CFS)

- It is the constant, severe state of tiredness that is not relieved by rest.
- It is similar to the flu, last longer than six months.
- It interferes with certain activities.
- The exact cause of this syndrome is still unknown.
- What is the difference between the CFS, chronic fatigue & idiopathic chronic fatigue?
  - **Chronic Fatigue Syndrome:**
    - Clinically evaluated, unexplained, persistent or relapsing fatigue.
    - That is of new or definite onset.
    - Is not the result of ongoing exertion.
    - Is not alleviated by rest.
    - Cause reduction in previous levels of occupational, educational, social, or personal activities.
  - **Chronic Fatigue:**
    - The presence of fatigue for longer than six months.
  - **Idiopathic Chronic Fatigue:**
    - No medical or psychiatric explanation can be found.
    - Persists for over six months and is debilitating.
    - But does not meet the criteria for the chronic fatigue syndrome.

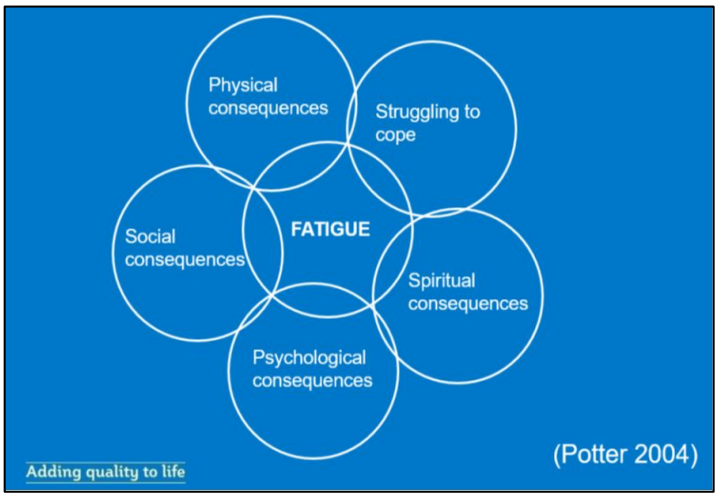
What is the difference between the CFS, chronic fatigue & idiopathic chronic fatigue?

Type	Definition
chronic fatigue syndrome (Based on CDC 2006)	Clinically evaluated, unexplained, persistent or relapsing fatigue. that is of new or definite onset. is not the result of ongoing exertion; is not alleviated by rest; Cause reduction in previous levels of occupational, educational, social, or personal activities
chronic fatigue	The presence of fatigue for **longer than six months**.
idiopathic chronic fatigue	**No medical or psychiatric explanation can be found** . persists for over six months and is debilitating. **but** does not meet the criteria for the chronic fatigue syndrome.

Fatigue & Tiredness

Fatigue Impact, Consequences & Effects

- **The impact of fatigue on quality of life:**
  - Fatigue has a strong negative impact on the patient's daily life.
- **Effects of Fatigue:**
  - Reducing mental and physical functioning.
  - Impairing judgement and concentration.
  - Lowering motivation.
  - Slowing reaction time.
  - Increasing risk-taking behaviour. (Ex. substance abuse (Stimulants), most common cause of initiating abuse)
- **Fatigue Consequences:** ↓



Evaluation Of Fatigue

- History (Most important to diagnose fatigue)
  - Enough in 80% of cases.
- Physical examination.
- Laboratory studies (CBC, Iron, Ferritin, MCV, HB to diagnose Anemia)
  - No tests for acute fatigue.
- It is subjective.
  - There are no real tests for this with regard to traditional laboratory or imaging studies.
  - It's a subjective lack of physical and/or mental energy that interferes with usual and desired activities.

Evaluation Of Fatigue

History:

- Age (Less serious among young), Gender (menopause, hemorrhage or pregnancy), occupation abrupt or gradual, related to event or illness?
- Course: stable, improving or worsening?
- Duration and daily pattern.
- Factors that alleviate or exacerbate symptoms.
- Impact on daily life ability to work. (by asking about: daily function, sleep & scoring)
- History of psychiatric or chronic illness

Physical Examination:

- General appearance: level of alertness, psychomotor agitation or retardation, grooming (psychiatric disorder)
- Presence of lymphadenopathy: a possible sign of chronic infection or malignancy.
- Evidence of thyroid disease: goiter, thyroid nodule, ophthalmologic changes.
- Cardiopulmonary examination: signs of congestive heart failure and chronic lung disease.
- Neurologic examination: muscle bulk, tone, and strength; deep tendon reflexes..etc.

Laboratory Tests:

- No laboratory tests for Acute fatigue.
- CBC with differentials. (Hb)
- Chemistry screen (including electrolytes, glucose, **renal** (CKD or electrolyte disturbance) and liver function tests).
- TSH.
- Creatine kinase, if pain or muscle weakness present.
- Other ? (Like blood glucose, b/c diabetes can cause fatigue)

Table 2. Laboratory Testing for Patients with Unexplained Fatigue

*Test**	*Possible conditions*	*Comments*
Complete blood count	Anemia	Should be performed in most patients with a two-week history of fatigue; results change management in 5 percent of patients[12]
Erythrocyte sedimentation rate	Inflammatory state	
Chemistry panel	Liver disease, renal failure, protein malnutrition	
Thyroid function tests	Hypothyroidism	
Human immunodeficiency virus antibodies (In IV drug abusers)	Chronic infection, if not previously tested	
Pregnancy test, if indicated	Pregnancy, breathlessness due to progestins	

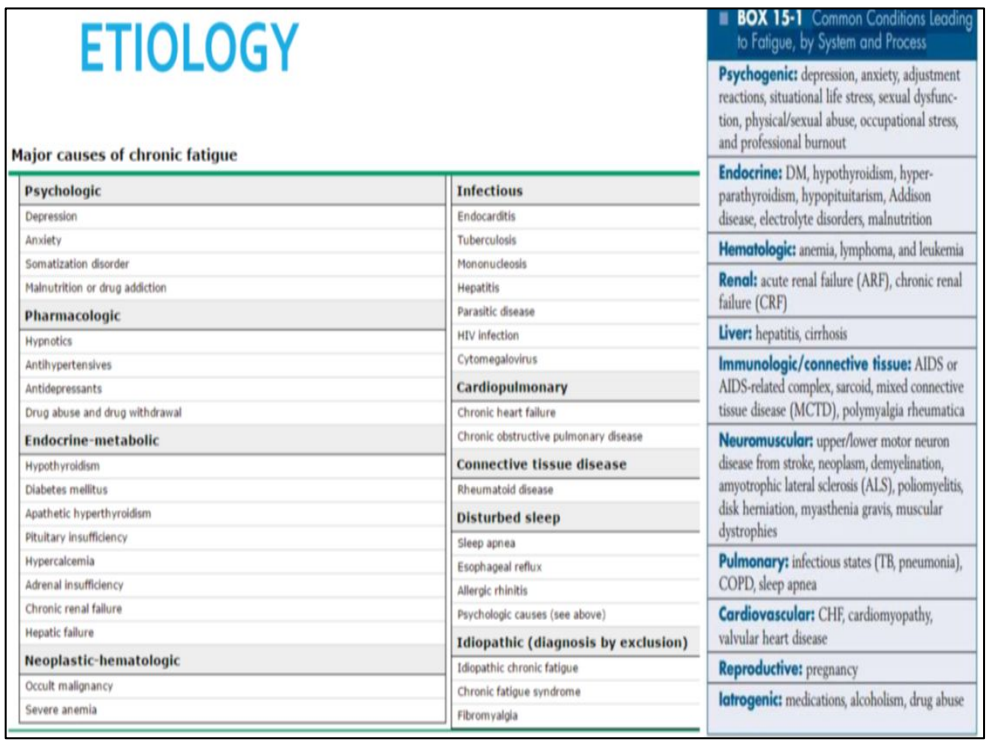
Possible Causes

Specific Clinical Signs Of Organic Disease Associated With Fatigue

- **Anemia:** Pallor, tachycardia, systolic ejection murmurs, koilonychia.
- **Iron deficiency:** Blue sclera.
- **Chronic liver disease:** Jaundice, palmar erythema, dupuytren's contracture
- **Hypothyroidism:** Goiter or thyroid nodule, dry skin, delayed deep tendon reflexes, peri-orbital puffiness, ophthalmological changes.
- **Hyperthyroidism:** Weight loss, hyper-reflexia, tachycardia, atrial fibrillation, fine tremor, goiter.
- **Addison's disease:** Hypotension, pigmentation in skin creases, scars and buccal mucosa, weight loss, hypoglycemia. (Or Coughing which may lead to proximal myopathy)
- **Heart failure:** Pulmonary stasis, elevated jugular venous pressure, ankle edema.

Possible Causes Chronic Fatigue

- Cancer. (Catabolism)
- Depression/emotional distress.
- Insomnia.
- Weight loss/poor nutrition/dehydration. (Low metabolism levels)
- Infection or Chronic inflammatory conditions.
- Anemia.
- Electrolyte imbalance.
- Side effects of medication (Beta blockers, antihistamine)
- Co-morbidities. (Catabolism in DM)
- Huge DDx that's why history and examination is important.



ETIOLOGY

Major causes of chronic fatigue

Psychologic	**Infectious**
Depression	Endocarditis
Anxiety	Tuberculosis
Somatization disorder	Mononucleosis
Malnutrition or drug addiction	Hepatitis
Pharmacologic	Parasitic disease
Hypnotics	HIV infection
Antihypertensives	Cytomegalovirus
Antidepressants	**Cardiopulmonary**
Drug abuse and drug withdrawal	Chronic heart failure
Endocrine-metabolic	Chronic obstructive pulmonary disease
Hypothyroidism	**Connective tissue disease**
Diabetes mellitus	Rheumatoid disease
Apathetic hyperthyroidism	**Disturbed sleep**
Pituitary insufficiency	Sleep apnea
Hypercalcemia	Esophageal reflux
Adrenal insufficiency	Allergic rhinitis
Chronic renal failure	Psychologic causes (see above)
Hepatic failure	**Idiopathic (diagnosis by exclusion)**
Neoplastic-hematologic	Idiopathic chronic fatigue
Occult malignancy	Chronic fatigue syndrome
Severe anemia	Fibromyalgia

BOX 15-1 Common Conditions Leading to Fatigue, by System and Process

Psychogenic: depression, anxiety, adjustment reactions, situational life stress, sexual dysfunction, physical/sexual abuse, occupational stress, and professional burnout

Endocrine: DM, hypothyroidism, hyperparathyroidism, hypopituitarism, Addison disease, electrolyte disorders, malnutrition

Hematologic: anemia, lymphoma, and leukemia

Renal: acute renal failure (ARF), chronic renal failure (CRF)

Liver: hepatitis, cirrhosis

Immunologic/connective tissue: AIDS or AIDS-related complex, sarcoid, mixed connective tissue disease (MCTD), polymyalgia rheumatica

Neuromuscular: upper/lower motor neuron disease from stroke, neoplasm, demyelination, amyotrophic lateral sclerosis (ALS), poliomyelitis, disk herniation, myasthenia gravis, muscular dystrophies

Pulmonary: infectious states (TB, pneumonia), COPD, sleep apnea

Cardiovascular: CHF, cardiomyopathy, valvular heart disease

Reproductive: pregnancy

Iatrogenic: medications, alcoholism, drug abuse

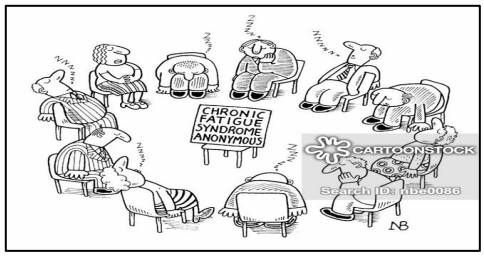
Treatment

Treatment of Fatigue:

- Rule Out:
  - Medical condition, a psychiatric condition, an inadequate sleep situation, a social situation, or a sleep disorder
  - Diagnose should be done before starting the treatment.
- **Nonpharmacologic and pharmacologic.**
  - **Nonpharmacologic:**
    - Mainly, especially in acute fatigue.
    - Patient education and understanding normal sleep requirements.
    - Diet, nutrition, exercise & adequate rest have a role.
  - **Pharmacological approach:**
    - Rarely, can be used in palliative malignancy or chronic fatigue.
    - Stimulants, wake-promoting agents, and other drugs or treatments

Chronic Fatigue Syndrome

Chronic Fatigue Syndrome (CFS)



1. **Unexplained, persistent or relapsing fatigue:**
    1. That is of new onset.
    2. Is not the result of ongoing exertion.
    3. Is not alleviated by rest.
    4. And results in substantial reduction in previous levels of occupational, educational, social, or personal activities.

And

2. **Four or more of the following: that persist or recur during six months.**
    1. Self-reported short term memory impairment.
    2. Sore throat.
    3. Tender cervical or axillary nodes.
    4. Muscle pain.
    5. Multi-joint pain without redness or swelling.
    6. Headaches of a new pattern or severity.
    7. Unrefreshing sleep.
    8. Post-exertional malaise lasting ≥24 hour. (Very easily fatigue ex. 15 min walk then became tired for ≥24 hour)

Dr. Criteria: CFS has two key:
1. Post exertional fatigue
2. Unrefreshing sleep

History OF CFS

- Typically report post exertional fatigue and feeling excessively tired after relatively normal tasks.
- Patients also report fatigue even after prolonged periods of rest or sleep.
- Typically report problems with short-term memory.
- They may report verbal dyslexia as the inability to find particular word during normal speech.
- **The five main symptoms:**
    1. Reduction or impairment in ability to carry out normal daily activities, accompanied by profound fatigue.
    2. Post-exertional malaise (worsening of symptoms after physical, cognitive, or emotional effort).
    3. Unrefreshing sleep.
    4. Cognitive impairment.
    5. Orthostatic intolerance (symptoms that worsen when a person stands upright and improve when the person lies back down).

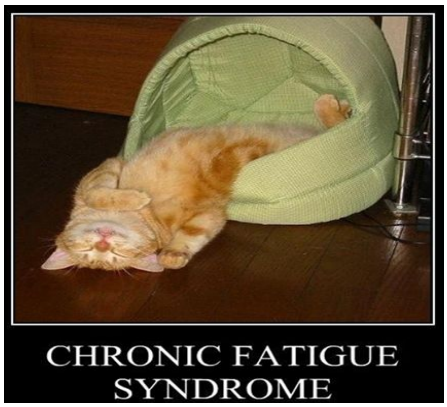
Physical Examination Of CFS

1. Physical examination often reveals no abnormalities. Some patients may have positive orthostatic vital signs.
2. Many patients have small, moveable, painless lymph nodes that most commonly involve the neck, axillary region, or inguinal region.

Chronic Fatigue Syndrome

Percentage Of The Common Symptoms Of Patients

- **Easy fatigability** **100 %**
- Difficulty concentrating 90%
- Headache 90 %
- Sore throat 85 %
- Tender lymph nodes 80 %
- Muscle aches 80 %
- Joint aches 75 %
- Feverishness 75 %



Possible Causes:

- Idiopathic.
- Infection Epstein-Barr virus (EBV).
- Depression.
- Sleep disruption.
- Others

Treatment

- The doctor-patient relationship.
- Establishing therapeutic goals. (solve one problem each time, ex. sleep then job etc..)
- Accomplishing the activities of daily living.
- Returning to work. (Rest has no benefit)
- Maintaining interpersonal relationships.
- Performing some form of daily exercise.
- Brief regularly scheduled appointments.
    - Never walk in appointments.

SORT: KEY RECOMMENDATIONS FOR PRACTICE

Clinical recommendation	*Evidence rating*	*References*	*Comments*
Exercise therapy should be prescribed for patients with fatigue, regardless of etiology.	A	16-18, 32, 43, 44, 46	There is no evidence that exercise therapy worsens outcomes.
Selective serotonin reuptake inhibitors, such as fluoxetine (Prozac), paroxetine (Paxil), or sertraline (Zoloft), may be helpful for patients with fatigue in whom depression is suspected.	B	22, 49	A six-week trial is recommended to evaluate effectiveness.
Cognitive behavior therapy is an effective treatment for adult outpatients with chronic fatigue syndrome.	A	22, 47, 48	—
Stimulants seldom return patients to predisease performance.	B	21, 45	Stimulants are associated with headaches, restlessness, insomnia, and dry mouth.

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, go to http://www.aafp.org/afpsort.xml.

CFS Treatment

A. Approach Considerations
B. CFS has no cure.
C. Treatment is largely supportive and focuses on symptom relief.
D. Cognitive Behavioral Therapy (CBT).

Exercise Therapy

- Exercise is not a cure for CFS. (But it helps)
- The patients felt less fatigued following exercise therapy and felt improved in terms of sleep, physical function, and general health.
- Graded Exercise Therapy (GET) is not recommended. (5 min then 10 then 15)

Dr. Summary

History and physical examination → Exclude CFS if another condition exists.

Establish prolonged and unexplained fatigue.

Evaluate mental status; personal and family psychiatric history.

Exclude other diagnostic possibilities.

↓

Laboratory tests → Exclude CFS if another condition exists.

Screen to exclude other diagnoses:

Serial weights, serial A.M. and P.M. temperatures, CBC, ESR, electrolytes, glucose, ALT, total protein, albumin, globulin, alkaline phosphatase, BUN, creatinine, creatine kinase, Ca, PO_4, TSH, and UA

Additional tests to support exclusion: serologies (Lyme disease, hepatitis B and C screen, HIV, ANA), PPD skin tests

↓

If fatigue persists for at least six months, evaluate for associated symptoms. → Classify as idiopathic chronic fatigue if associated symptoms are not present.

Four or more of the following symptoms are present: myalgias, arthralgias, sore throat, lymphadenopathy, headaches, postexertional malaise, impaired memory and/or concentration.

Lecture Quiz

Q1: A 25 Y/O girl presents with exertional dyspnea and fatigue for 4 months. She's not known to have any medical illnesses. She feels fatigue most of the time and mainly when doing her daily activity. She sleeps well and has no mood changes. Her menstrual cycle is heavy over the last 8 months (but regular and not associated with pain) Her vital signs : BP: 105 /71 Pulse : 98 Temp : 37.2. What's the most likely diagnosis she has ?

A. Chronic fatigue syndrome
B. Depression with anxiety symptoms
C. Stress related fatigue
D. Iron deficiency anaemia

Q2: In regard to Q1, What's the most appropriate test to do?

A. Referral to psychiatry specialist to start antidepressant
B. Cognitive behavioural therapy
C. To test for ferritin, iron and TIBC
D. Start multivitamins supplements

Q3: Which of the following clinical scenarios fits with depression ?

A. A 50 Y/O man presents with fatigue, headache and gaining weight for 3 months
B. A 40 Y/O woman presents with history of fatigue, awakening from sleep and snoring for the last 2 months
C. A 35 Y/O woman presents with fatigue, feeling unhappy and she sleeps more than usual during the last 3 weeks
D. A 25 Y/O presents with fatigue, heart palpitation and fear from the future over the last 3 months

Q4: A 46 Y/O female presented with sore throat and fatigue for the last 8 months. She has T2DM and it's controlled by following diabetic diet and metformin. She complains of long sleep for 12-14 hours per day and awake very tired and non-refreshed. She missed her work many times due to fatigue and muscle pain. She visited many doctors in neurology, rheumatology and family medicine who tried many medicines with no improvement. She has no suicidal ideation or psychotic symptoms. She has history of flu symptoms 2 months ago that lasted for 10 days. Vital signs: BP : 124/70 Pulse : 88 temp : 37.2 BMI : 25
What's the most likely diagnosis ?

A. Acute viral infection
B. Subclinical hypothyroidism
C. Chronic fatigue syndrome
D. Obstructive sleep apnea

Q5: In regard to Q4, What's the most likely treatment approach to this patient ?

A. Oral antibiotic and paracetamol for 10 days
B. Psychiatric referral to exclude mood disorder
C. Establishing appropriate doctor-patient relationship and fixed appointments
D. Reassurance and discharge from the clinic

Q6: A 30-year-old man presents with fatigue for 2 months. She has not known to have any medical illnesses. He spends 16 hours in his work and drinks 5 cups of coffee to make him alert during the day. At nights he stays on bed almost 2 hours before falling asleep. He takes Panadol Night to help him falling asleep. His mood and usual interest are stable. He denied any medical illness. Physical examination: Unremarkable.Her vital signs: BP: 105/71 Pulse: 98 Temp: 37.1
What is the most likely causing his fatigue?

A. Chronic fatigue syndrome
B. Depression with anxiety symptoms
C. Poor sleep quality
D. Poor job satisfaction

Answers: Q1:D | Q2:C | Q3:C | Q4:C | Q5:C | Q6:C

THANKS!!

Obtained and edited from Team 437, by:

- Abdulaziz Alangari

Original creators:

Special thanks to..
437 team

Team Leader:
Raed Alojairy

Send us your feedback:
We are all ears!