



FATIGUE AND TIREDNESS

Objectives:

1. Define the meaning of fatigue vs. malaise vs. tiredness
2. Discuss the pathophysiology of fatigue and malaise
3. Discuss the common causes of fatigue and tiredness
4. Explain the diagnostic criteria of chronic fatigue syndrome
5. Understand the basic clinical approach to patient with fatigue

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References

- Doctor's slides and notes

Important *Notes* *Extra* *Golden*

Editing file [link](#)

Fatigue and Tiredness

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

Definitions

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



- Tiredness is one of the most common complaints of people seen in primary healthcare.
- Muscle tiredness (ASTHENIA)

(Fatigue is a condition whereas Tiredness is a symptom)

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.
- 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)

FATIGUE

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1. Recent-Acute (less than one month),
2. Prolonged-Subacute (more than one month till 6 months)
3. Chronic (over six months)



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.

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.

(Usually caused by stress, sleep deprivation)

Chronic fatigue syndrome:

- 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.

Fatigue is two types

Physical → prevents participation in activities and impedes activities of daily living.

Cognitive → complicates activities e.g. reading, driving a car and thus prevents leisure activities

Fatigue symptoms

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

The impact of fatigue on quality of life.

Fatigue has a strong negative impact on the patient's daily life.

Fatigue Consequences



Effects of Fatigue

- Reducing mental and physical functioning
- Impairing judgement and concentration
- Lowering motivation
- Slowing reaction time
- Increasing risk-taking behaviour. (like substance abuse)



Evaluation of fatigue

- History (most important to diagnose fatigue)
- Physical examination
- Laboratory studies (CBC, Iron, Ferritin, MCV, HB to diagnose Anemia)

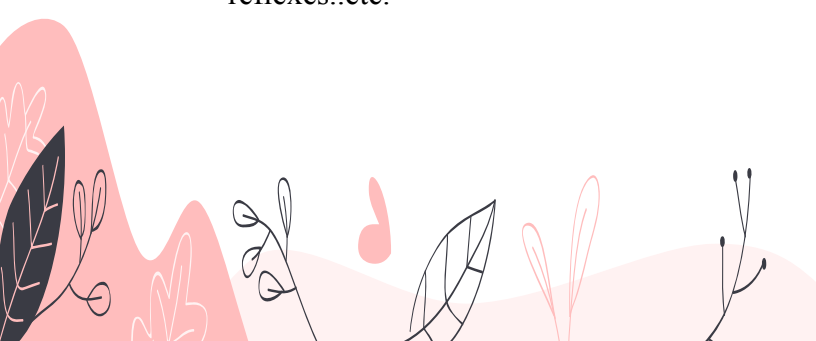

Evaluation of fatigue

- 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.

History

- Age, Gender (menopause, Hemorrhage), 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.

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.
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Laboratory tests

1. CBC with differentials.
2. Chemistry screen (including electrolytes, glucose, renal and liver function tests).
3. TSH
4. Creatine kinase, if pain or muscle weakness present
5. Other ??? (Like Diabetes, because hypoglycemia can cause it)

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	Chronic infection, if not previously tested	
Pregnancy test, if indicated	Pregnancy, breathlessness due to progestins	

Specific clinical signs of organic disease associated with fatigue

1. Pallor, tachycardia, systolic ejection murmurs: anemia
2. Blue sclera: iron deficiency.
3. Jaundice, palmar erythema, Dupuytren's contracture: chronic liver disease
4. Goiter or thyroid nodule, dry skin, delayed deep tendon reflexes, peri-orbital puffiness, ophthalmological changes: hypothyroidism
5. Weight loss, hyper-reflexia, tachycardia, atrial fibrillation, fine tremor, goiter: hyperthyroidism
6. Hypotension, pigmentation in skin creases, scars, and buccal mucosa: Addison's disease
7. Pulmonary stasis, elevated jugular venous pressure, ankle edema: heart failure

Possible causes of Fatigue

- Cancer
- Depression/emotional distress
- Insomnia
- Weight loss/poor nutrition/dehydration
- Infection
- Anemia
- Electrolyte imbalance
- Side effects of medication (Beta blockers, antihistamine)
- Co-morbidities

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 of Fatigue

Role out: medical condition, a psychiatric condition, an inadequate sleep situation, a social situation, or a sleep disorder

Nonpharmacologic and pharmacologic.

Nonpharmacologic: what we use normally

- Patient education and understanding normal sleep requirements.
- Diet and nutrition have a role

Pharmacological approach:

stimulants, wake-promoting agents, and other drugs or treatments

Chronic Fatigue Syndrome (CFS)

1. Unexplained, persistent or relapsing fatigue:

that is of new onset; is not the result of ongoing exertion; is not alleviated by rest; 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.

Self-reported short term memory impairment , Sore throat, Tender cervical or axillary nodes, Muscle pain, Multi-joint pain without redness or swelling, Headaches of a new pattern or severity, Unrefreshing sleep, Post-exertional malaise lasting ≥ 24 hour



History OF CFS

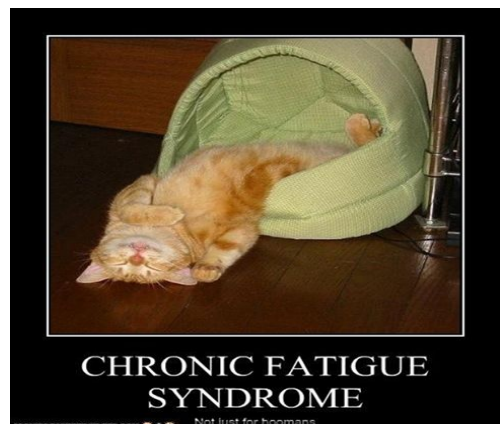
1. Typically report post exertional fatigue and feeling excessively tired after relatively normal tasks
2. Patients also report fatigue even after prolonged periods of rest or sleep.
3. Typically report problems with short-term memory
4. They may report verbal dyslexia as the inability to find particular word during normal speech.

The five main symptoms:

5. Reduction or impairment in ability to carry out normal daily activities, accompanied by profound fatigue
6. Post Exertional malaise (worsening of symptoms after physical, cognitive, or emotional effort)
7. Unrefreshing sleep
8. Cognitive impairment
9. Orthostatic intolerance (symptoms that worsen when a person stands upright and improve when the person lies back down)

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 % |





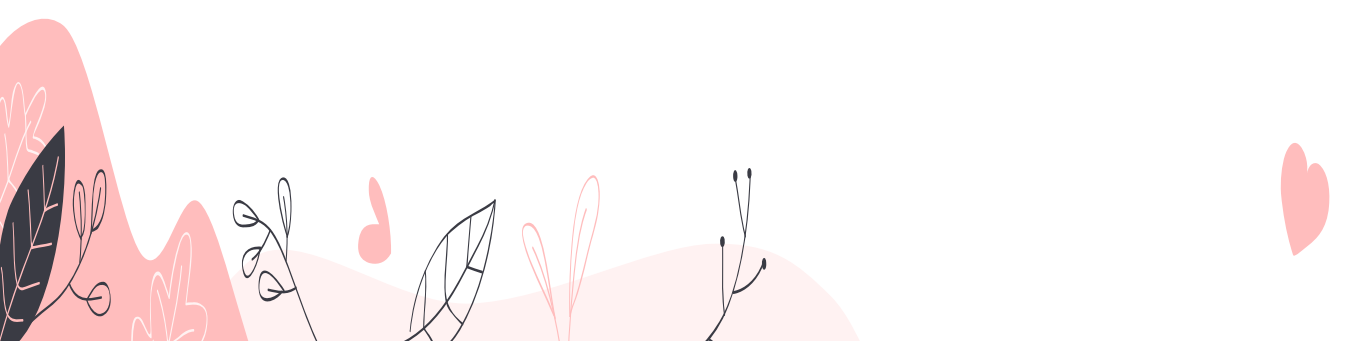
Physical Examination

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

Possible causes :

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

Treatment

- The doctor-patient relationship
 - Establishing therapeutic goals.
 - Accomplishing the activities of daily living.
 - Returning to work.
 - Maintaining interpersonal relationships.
 - Performing some form of daily exercise.
 - Brief regularly scheduled appointments
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CFS Treatment

1. Approach Considerations
2. CFS has no cure. Treatment is largely supportive and focuses on symptom relief.
3. Cognitive Behavioral Therapy (CBT).

SORT: KEY RECOMMENDATIONS FOR PRACTICE

<i>Clinical recommendation</i>	<i>Evidence rating</i>	<i>References</i>	<i>Comments</i>
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>.

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. (A 2017 Cochrane review)
- Graded Exercise Therapy (GET) is not recommended. **Just the regular exercise** (The CDC and AHRQ)

SUMMARY- FATIGUE

History and physical examination

Establish prolonged and unexplained fatigue.
Evaluate mental status; personal and family psychiatric history.
Exclude other diagnostic possibilities.

→ Exclude CFS if another condition exists.



Laboratory tests

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, PO₄, TSH, and UA

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

→ Exclude CFS if another condition exists.



If fatigue persists for at least six months, evaluate for associated symptoms.

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

→ Classify as Idiopathic chronic fatigue if associated symptoms are not present.

QUESTIONS

1. 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

2. A 30 -year-old woman presented with and fatigue for the last 10 months. She has dysmenorrhea and takes pain killers PRN. She sleeps 13 hours a day and awakes very tired every morning and feels un-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 had history of flu symptoms two months ago that lasted for 10 days. Vital signs: BP:11/75 pulse: 88 temp: 37.2 BMI: 25

- What is the most likely diagnosis

A. Obesity related sleep disturbances

B. Depression

C. Chronic Fatigue syndrome

D. Chronic Insomnia

- What is 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

QUESTIONS

3. A 68 year old woman who is known to have type 2 diabetes mellitus for 10 years and celiac disease for 34 year. She takes metformin 100 mg two times a day and insulin at night. She complains of fatigue and lethargy for 7 months. She has poor Concentration and has exercise intolerance. She lost 5 kg of her weight over the last year. She denied mood changes of sleep disturbances. On examination: She looks lethargic, pale and cachexic. No abdominal masses. Vital signs: are within normal. CBC: WBC: 4 RBC: Hb: 10.1 MCV: 109 platelets: 220. Ferritin 100 Creatinine :101

- What is the most likely diagnosis of this case?

- A. Iron deficiency anemia
- B. Chronic anemia due to Diabetic nephropathy
- C. Vitamin b12 deficiency anemia
- D. Chronic myeloid leukemia

- What is the next laboratory test?

- A. Calculate the GFR to assess the renal function
- B. Measure TIBC and transferrin saturation
- C. Test the serum Vitamin B12 and folate levels
- D. Perform Bone marrow biopsy

4. 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:

- 1. c
- 2. c, c
- 3. c, c
- 4. c