

# The etiology and management of fatigue in individuals with cancer: An update

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# Overview

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Etiology

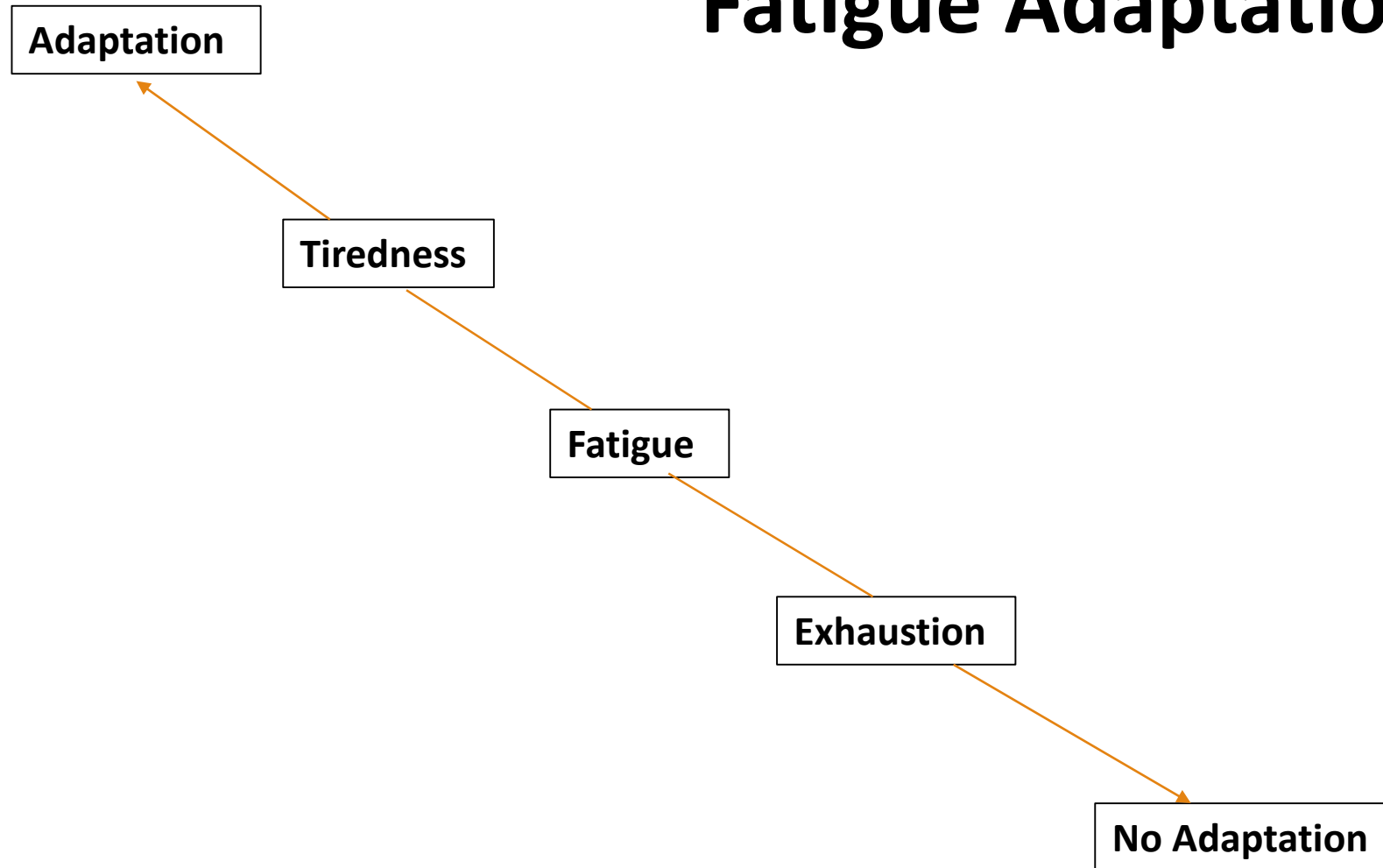
Screening

Assessment

Management

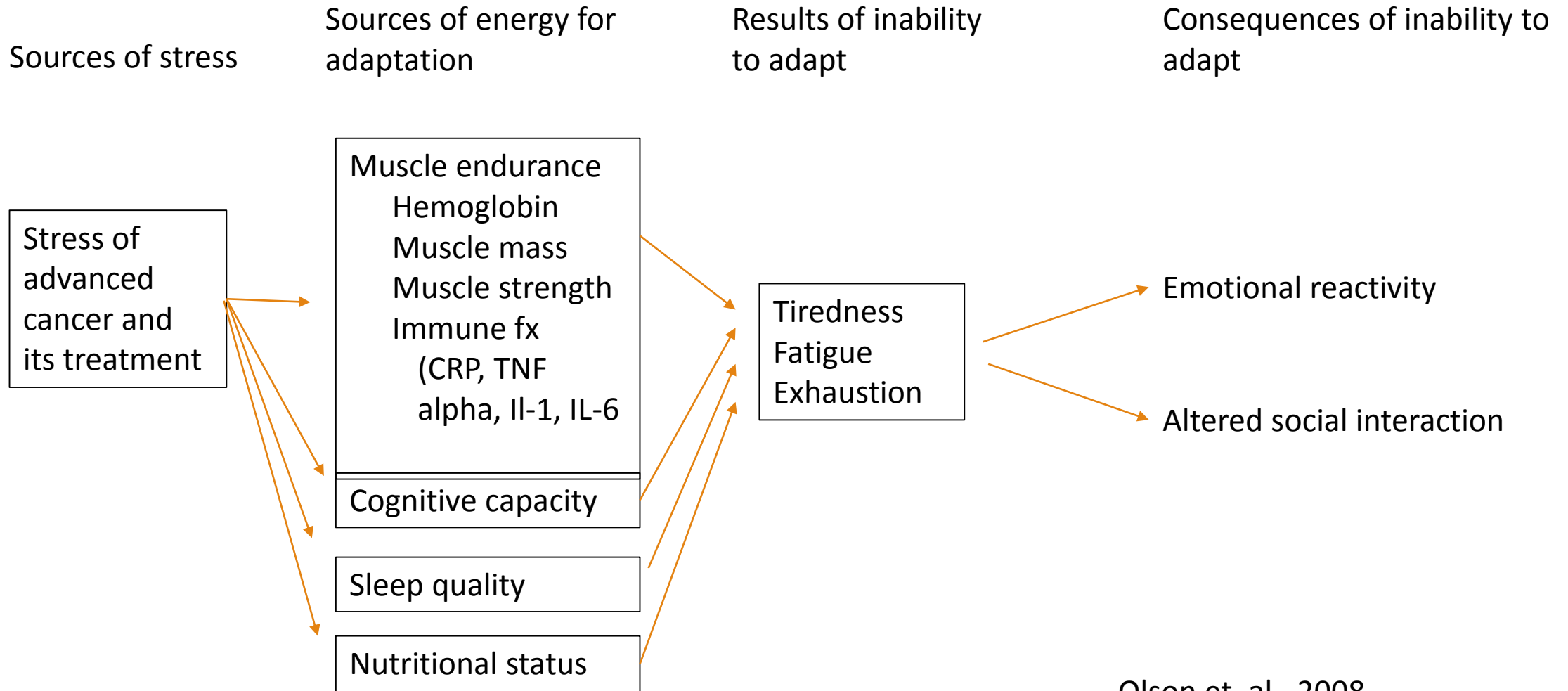
- Medications
- Exercise
- CBT
- Complementary Therapies

# Fatigue Adaptation Model

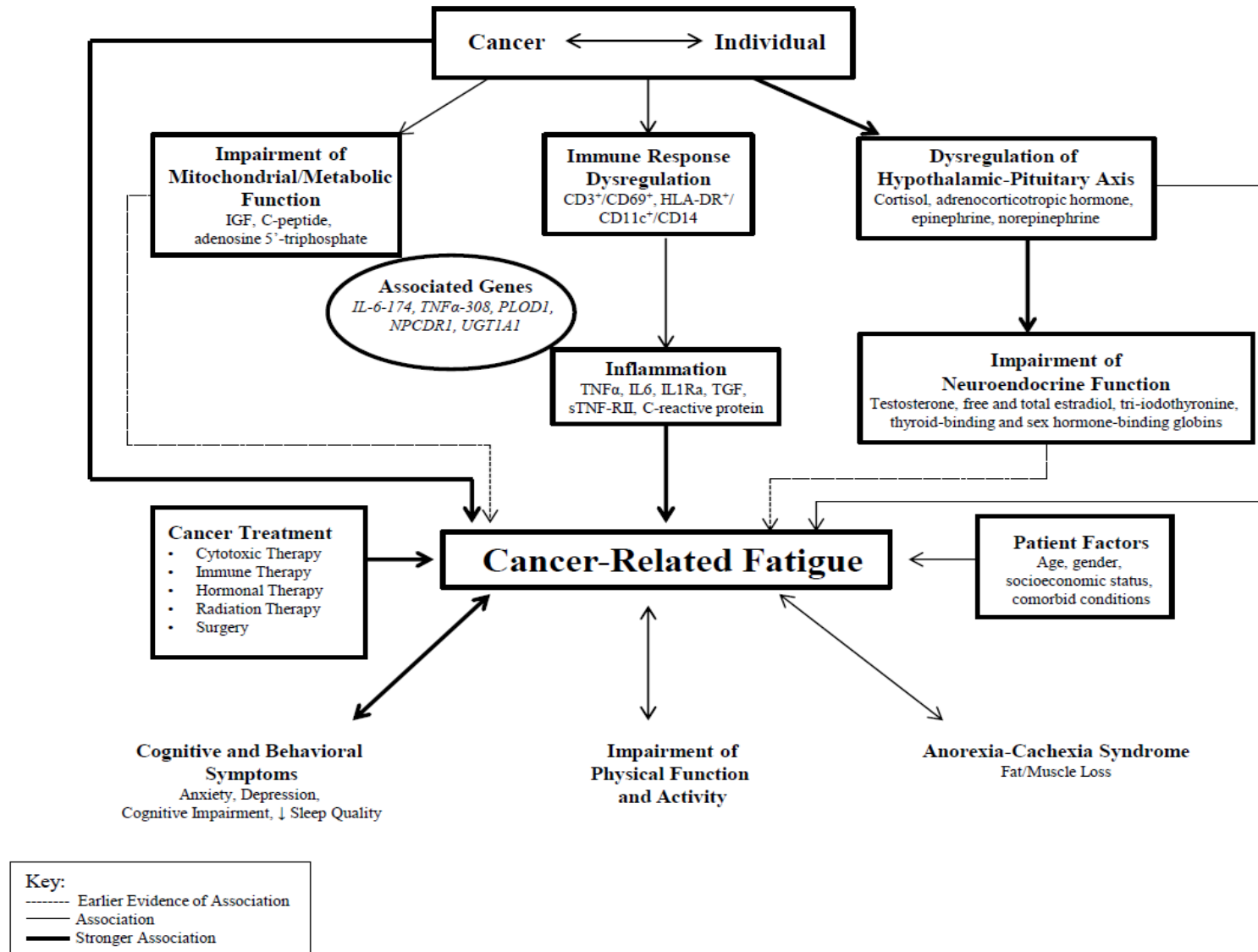


Olson, et. al., 2007

# Edmonton Fatigue Framework



Olson et. al., 2008



(MASCC Fatigue Study Group – Biomarker Working Group et al., in press)

# Manifestations of Fatigue

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## COGNITIVE/BEHAVIOURAL

Symptoms of anxiety

Depressive symptoms

Altered sleep quality

Perceived cognitive  
impairment

## PHYSICAL FUNCTION/ACTIVITY

Decreased muscle function

## ANOREXIA/CACHEXIA

Anorexia/cachexia  
syndrome

# Case definition

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## Required components:

- Decline in muscle function
- Increase in emotional lability
- Decreased sleep quality
- Decline in perceived cognitive function

## Optional components associated with advanced cancer in some tumor groups:

- Anorexia/cachexia syndrome

# Fatigue Guidelines

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Bower, J., Bak, K., Berger, A., Breitbart, W., Escalante, C., Ganz, P., Hill Schnipper, H., Lacchetti, C., Ligibel, J., Lyman, G., Ogaily, M., Pirl, W., & Jacobsen, P. (2014). Screening, Assessment, and Management of Fatigue in Adult Survivors of Cancer: An American Society of Clinical Oncology Clinical Practice Guideline Adaptation. *Journal of Clinical Oncology* 32(17), 1840-1850.

Howell, D., Keshavarz, H., Broadfield, L., Hack, T., Hamel, M., Harth, T., Jones, J., McLeod, D., Olson, K., Phan, S., Swaka, A., Swinton, N., & Ali, M. A Pan Canadian Practice Guideline for Screening, Assessment, and Management of Cancer-Related Fatigue in Adults Version 2 – 2015. [http://www.capo.ca/pdf/CRF\\_Guideline.pdf](http://www.capo.ca/pdf/CRF_Guideline.pdf).



# Screening

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Numerical Rating Scale (self report):

0 1 2 3 4 5 6 7 8 9 10

Mild Fatigue: 1-3

Moderate Fatigue: 4-6

Severe Fatigue: 7-10

# Assessment

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## Mild (1-3)

- No further assessment required

## Moderate (4-6) and Severe (7-10)

- Complete focused assessment: OPQRSTUIV
- Use of an valid and reliable fatigue scale
- Obtain lab work and history to identify contributing factors
  - Complications of treatment (anemia, infection, fever)
  - Nutritional deficiencies (weight history, diet patterns)
  - Fluid/electrolyte imbalance (sodium, potassium, magnesium, calcium)
  - Medications (opioids, antihistamines, antidepressants, alcohol/recreational drugs)
  - Comorbid conditions (cardiac, pulmonary, metabolic, endocrine, hepatic, renal, neuro, depression, anxiety, insomnia, dementia)
  - Other symptoms (pain, depression, anxiety ,sleep: scores of 4/10 or more refer to guidelines for depression, anxiety, and sleep)
  - Inflammation (CRP)
- Physical exam with particular emphasis on muscle strength and function

# Assessment links intervention to stage of disease and disease trajectory

	Treatment	End of Life	Survivors
Early stage			
Late stage			

# Fatigue Interventions

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## **Eligibility criteria**

Adults diagnosed with cancer who scored fatigue at > 3/10 or greater

## **Types of interventions**

Any pharmacological and any non-pharmacological (psychosocial, CBT, psycho-education or patient education, mindfulness meditation, yoga, exercise/activity, complementary medicine) interventions for the management of CRF in adult patients.

## **Methodological quality**

- 1) AGREE II to assess the variability in the quality of the guideline process.
- 2) AMSTAR (Assessment of Multiple Systematic Reviews) to assess the methodological quality of the systematic reviews
- 3) Risk of Bias Tool by the Cochrane Collaboration<sup>16</sup> to assess Rats.

# Medications

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1. There is insufficient evidence to recommend pharmacological agents for fatigue at any stage of disease.
2. Tentative trend in benefit for methylphenidate in advanced disease but safety was not confirmed to recommend use
3. Minimal benefit of short-term use of dexamethasone in advanced cancer
4. Co-enzyme Q10 (CoQ10) supplementation was not superior to placebo.

# Exercise

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1. increasing physical activity is associated with a reduction in fatigue in cancer patients and survivors. Overall, we found that exercise moderately reduced CRF among all type of cancer patients diagnosed with fatigue regardless of stage of treatment; significant benefit shown ( $p=0.0005$ ).

# Cognitive Behavioural Therapy

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1. Education and psychosocial interventions are likely to be effective in reducing fatigue but the conclusions are not definitive.
2. Limited evidence that general psychosocial interventions that are not targeted specifically to fatigue are effective.

# Complementary Therapies

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1. There is insufficient evidence from 6 identified systematic reviews and 5 RCTs for the effectiveness of acupuncture for cancer related fatigue.
2. A systematic review of complementary interventions including massage, healing touch, relaxation training, and hypnosis, for treatment of cancer related fatigue provides limited evidence for the effectiveness of these interventions.
3. Ginseng, and vitamin supplements are not beneficial in treating cancer related fatigue.
4. Chinese herbal medicines are not beneficial in treating cancer related fatigue.



# Questions?



# References

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McEwen BS, Seeman T (1999) Protective and damaging effects of mediators of stress: elaborating and testing the concepts of allostasis and allostatic load. *Ann N Y Acad Sci* 896:30–47

Olson, K., Krawchuk, A., & Quddusi, T. (2007). Fatigue in individuals with advanced cancer in active treatment and palliative settings. *Cancer Nursing* 30 (4), E1-E10.

Olson, K., Turner, A. R., Courneya, K. S., Field, C., Man, G., Cree, M., & Hanson, J. (2008). Possible links between behavioural and physiological indices of tiredness, fatigue, and exhaustion in advanced cancer. *Supportive Care in Cancer*. 16(3), 251-259.

Saligan, L., Olson, K., Filler, K., Larkin, D., Cramp, F., Yennurajalingam, S., Excalante, C., Giglio, A., Kober, K., Kamath, J., Palesh, O., & Mustian, (2015). The biology of cancer-related fatigue: A review of the literature. *Supportive Care in Cancer*. DOI 10.1007/s00520-015-2763-0