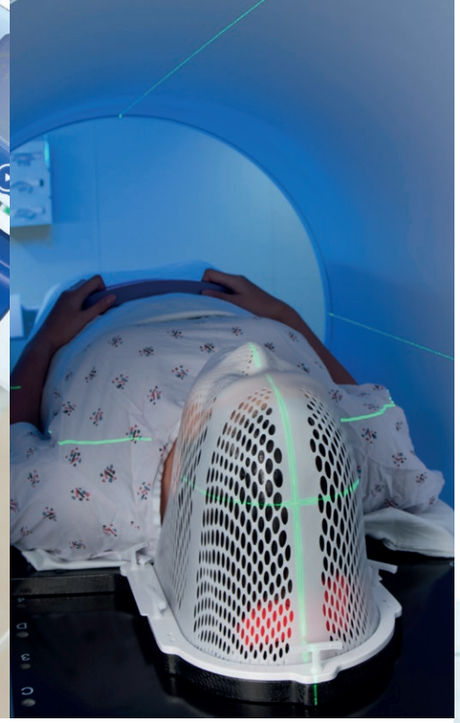
FRESENIUS KABI
caring for life

Supportive care for better treatment outcome

Fatigue Management



Cancer-related fatigue

Clinically relevant side effect of cancer treatment

Fatigue has been reported as an important problem by patients with cancer. It affects more patients for more of the time than any other symptom and is regarded by patients as being more important than either pain or nausea/vomiting.[1]

Despite the high importance for patients: Only 14 % of patients were treated or received advice about the management of their fatigue.[1,*]

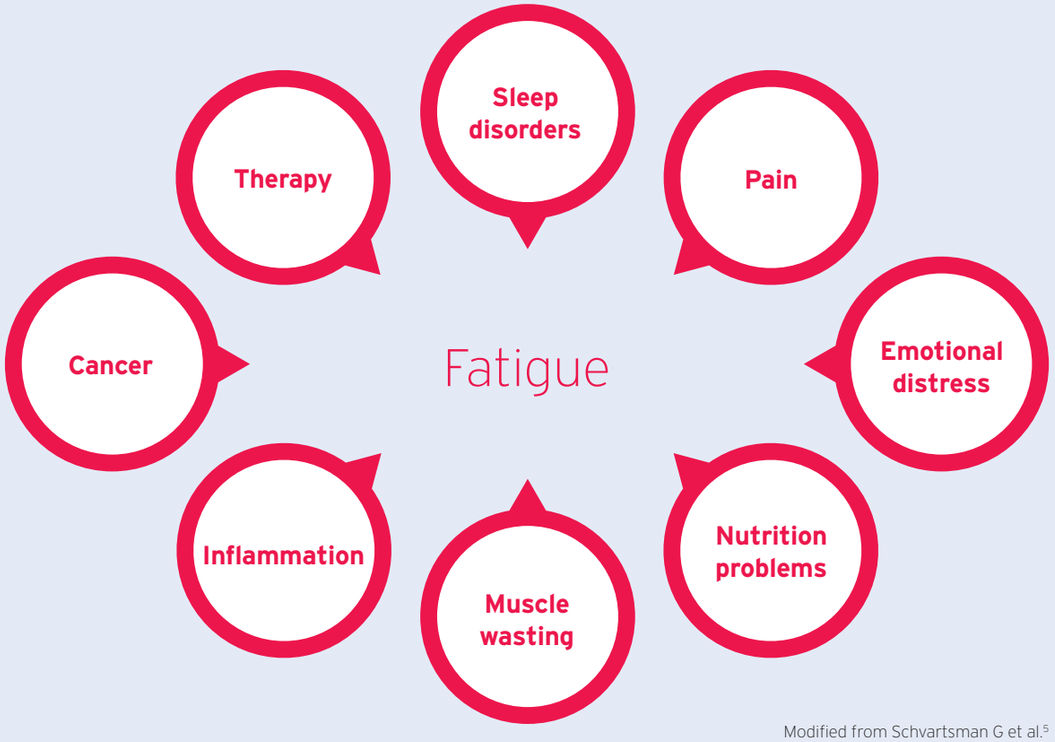
* Cross-sectional, questionnaire-based patient survey

Cancer treatment has many effects – Fatigue is among most common and disabling[2]

Fatigue – common symptom in patients with cancer[3,4,5]

- Up to 90 % of cancer patients are affected[3,5] receiving chemotherapy and/or radiation therapy, bone marrow transplantation, or treatment with immunotherapies[4,6]
- Approximately one-third of patients still experience fatigue after completion of therapy[5,7] and symptoms may persist for months or years after treatment completion[2]
- Due to developments in cancer treatment associated with better treatment outcomes more patients with prolonged states of fatigue are expected[4]

Cancer-related fatigue – multifactorial symptom with various contributors



Modified from Schvartsman G et al.[5]

Fatigue – the most distressing symptom for cancer patients[3,4]

- Profoundly affects quality of life[3]
  - Strong and independent predictor of decreased overall patient satisfaction[3,8]
  - Reduces patient's ability to participate in essential and valued life activities[2,9]
- Limits patient's condition to complete medical treatments for cancer[2]

Fatigue impairs food intake

In a study examining patient self-reports on meal disturbances and food preferences in various treated cancer patients along their disease trajectory

3 out of 4

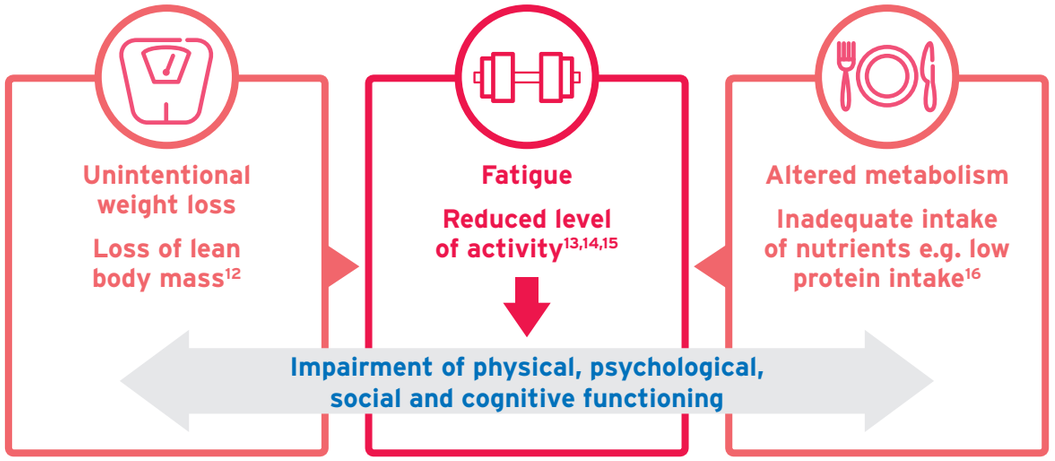
patients experienced fatigue. Half of the study cohort was able to prepare a meal after returning home (independent from their fatigue-status)[10]

In colorectal cancer outpatients referred for radiotherapy increased fatigue was significantly associated with

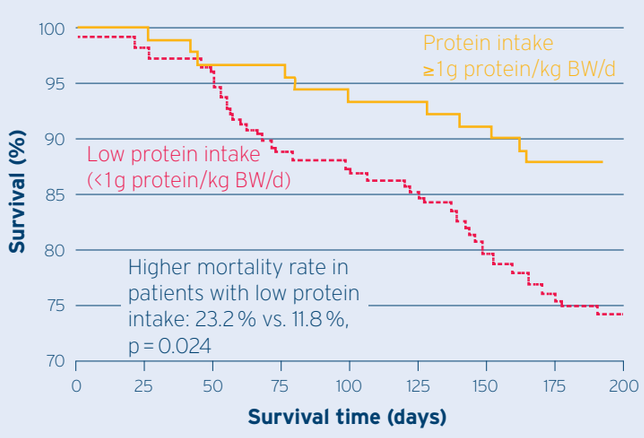
- poorer nutritional intake and
- nutritional status deterioration[11]

nutritional status

Nutritional decline promotes cancer-related fatigue



Low recent protein intake (<1 g/kg/d) assessed by 24-h-recall in cancer patients undergoing chemotherapy



- Twofold higher risk of cancer-related fatigue (p = 0.035)
- 3.3-fold increased risk of death within 6 months (p = 0.004)[16]

Mixed cancer population undergoing chemotherapy (n = 285)
Modified from Stobäus N et al.[16]

Regular screening and assessment for cancer-related fatigue

Aim:

Identification and treatment of contributing factors

Screening (modified from[4,7,18])

Patient self-assessment for fatigue severity using numerical rating scale (0–10)*

'How would you rate your fatigue on a scale of 0–10 over the past 7 days?'

0	1 2 3	4 5 6	7 8 9	10
	Mild fatigue	Moderate fatigue	Severe fatigue	

For all patients: Patient education, counselling and general strategies for management of fatigue

For patients rated ≥ 4:
more focused history and physical examination

- Assessment of **treatable contributing factors:**

Pain

Emotional distress

Anaemia

Sleep disturbance/poor sleep hygiene

Decreased functional status

Medications/side effects (e.g. sedation)

Comorbidities

Nutritional deficits/imbalance

- Weight changes
- Caloric intake changes

Guideline recommendations:

ESPEN guidelines on nutrition support in cancer[17]

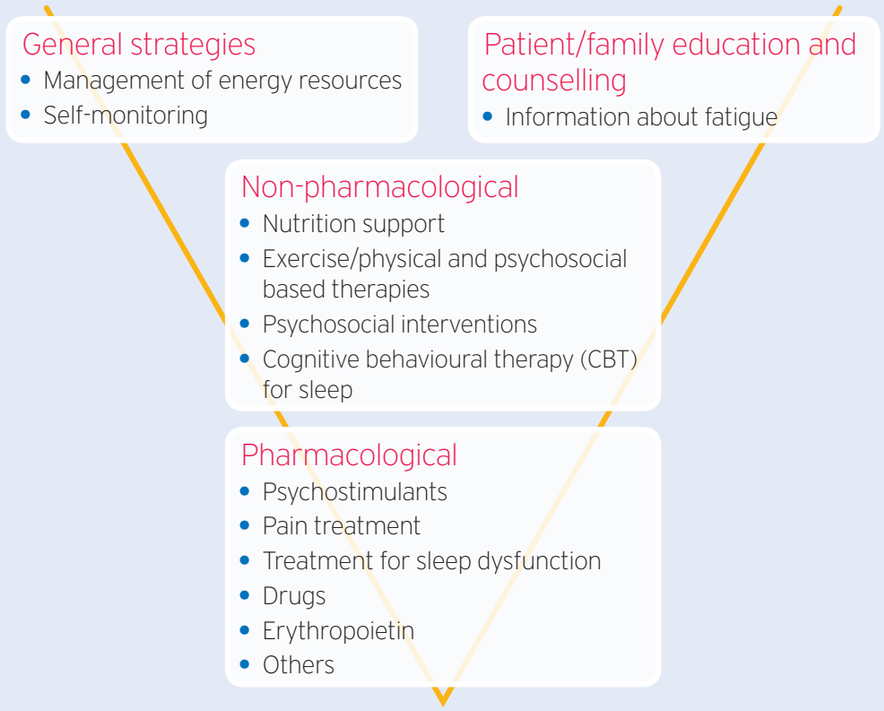
'We recommend that protein intake should be above 1 g/kg/day and, if possible up to 1.5 g/kg/day'

Guideline recommendations:

ASCO 2014, NCCN 2015: Patients should be screened regularly for multiple symptoms related or leading to fatigue beginning with diagnosis and beyond completion of therapy.[4,7]

*Useful screening tools i.e. ESAS (Edmonton Symptom Assessment System), FACT-F (Functional Assessment of Cancer Therapy: Fatigue), EORTC QLQ (FS)

Multimodal treatment of cancer-related fatigue



> Many patients are not prepared for the degree of fatigue they might experience after treatment and/or not educated in management strategies to cope with it, even though a number of interventions have been found helpful. These include exercise, diet, adequate sleep, education, information, counselling, and complementary therapies.[19]

Nutrition support for adequate nutritional intake and decreasing fatigue

Low protein intake (< 1 g/kg/day) is a powerful contributor to cancer-related fatigue undergoing chemotherapy.[16]

Poor nutritional intake is significantly associated with increased fatigue.[11]

- Proper nutritional intake should be regularly assessed and guaranteed by adequate nutrition support.[4,16]

In colorectal cancer outpatients referred for radiotherapy:

- 'Patients not submitted to any nutritional intervention experienced a significant deterioration in function scores and fatigue in direct relation to the worsening of their nutritional intake and nutritional status.'[11]

In patients with NSCLC receiving chemotherapy oral nutritional supplements containing EPA significantly

- improved energy and protein intake and decreased fatigue, loss of appetite and neuropathy[20]

In advanced cancer patients undergoing an interdisciplinary rehabilitation program providing nutritional counselling alongside an exercise program and dedicated symptom control:

- Significant improvements in physical endurance, nutrition status, symptom severity, fatigue, and physical endurance[21,22]

Guideline recommendations:

NCCN 2015: Interventions for the management of cancer-related fatigue may include education and counselling, general strategies for the management of fatigue, and specific non-pharmacologic and pharmacologic interventions.[4]

Nutritional consultation including assessment of nutritional deficits/imbalance is an important part of the multimodal treatment approach.

NSCLC Non-small-cell lung carcinoma

Nutrition support – Guideline recommendations

NCCN guidelines Cancer-related fatigue[4]

Nutrition Consultation: 'Many patients with cancer have changes in nutritional status. Because cancer and treatment can interfere with dietary intake, nutrition consultation may be helpful in managing the nutritional deficiencies that result from anorexia, diarrhoea, nausea, and vomiting. Adequate hydration and electrolyte balance are also essential in preventing and treating fatigue.'

ESPEN guidelines on nutrition support in cancer[17]

Ensuring adequate nutritional intake
'We recommend nutritional intervention to increase oral intake in cancer patients who are able to eat but are malnourished or at risk of malnutrition. This includes dietary advice, the treatment of symptoms and derangements impairing food intake (nutrition impact symptoms), and offering oral nutritional supplements.' (STRONG)

Modes of nutrition: When to escalate
'If a decision has been made to feed a patient, we recommend enteral nutrition if oral nutrition remains inadequate despite nutritional interventions (counselling, ONS), and parenteral nutrition if enteral nutrition is not sufficient or feasible.' (STRONG)

ONS

Tube feeding

> 'During and after treatment, nutritional goals should involve preventing malnutrition as well as achieving or maintaining a healthy weight and lean body mass.'[12]

Range of products for optimal nutrition support

Product	Product features	Indication
Supportan DRINK 	• Oral nutritional supplement high in energy, high in EPA from fish oil: 1 g EPA and 20 g Protein per 200 ml bottle • Adapted to the specific metabolic changes in oncologic patients	Oral nutritional supplements to ensure adequate nutritional intake in patients with reduced oral intake for treatment or prevention of malnutrition.
Fresubin 2 kcal DRINK/ Fresubin 2 kcal Fibre DRINK 	• High-caloric, high protein oral nutritional supplement: 400 kcal and 20 g protein per 200 ml bottle • Available with prebiotic fibre as well as without fibre	
Fresubin 3.2 kcal DRINK 	• Low volume high-caloric, high protein oral nutritional supplement: 125 ml bottle contains 400 kcal, 20 g Protein and 10 µg Vitamin D_3 • For good compliance due to reduced volume	
Fresubin 2 kcal Crème 	• Semi-solid oral nutritional supplement with a creamy consistency • High in calories and protein: 250 kcal and 12.5 g protein per 125 g cup	
Survimed OPD 1.5 kcal DRINK 	• Designed for easy absorption, high in energy and high in hydrolysed protein: 300 kcal and 15 g of protein per 200 ml bottle	
Supportan 	• Tube feed high in EPA from fish oil: 2 g EPA per 500 ml bag • Adapted to the specific metabolic changes in cancer cachexia	Tube feedings to ensure adequate nutritional intake in patients with existing or expected severe swallowing difficulties with or at risk of malnutrition.
Fresubin 2 kcal HP/ Fresubin 2 kcal HP Fibre 	• High-caloric, high protein standard tube feed: 1000 kcal and 50 g protein per 500 ml bag • Available with prebiotic fibre as well as without fibre	
Survimed OPD HN 	• Designed for easy absorption, 1.33 kcal/ml tube feed rich in protein: 800 kcal and 33.5 g of protein per 500 ml bag • Adapted protein and fat composition for patients with diarrhoea and potential malabsorption	

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