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<td>Cynthia Abarado, DNP, RN, GNP-BC Advanced Practice Nurse Genitourinary Medical Oncology The University of Texas MD Anderson Cancer Center</td>
<td>德克萨斯大学 MD Anderson 癌症中心生殖泌尿系统肿瘤科 高级专科护士 Cynthia Abarado, DNP, RN, GNP-BC</td>
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Hello, my name is Cynthia Abarado. I am an Advanced Practice Nurse at the Department of Genitourinary Medical Oncology here at the MD Anderson Cancer Center. 大家好，我叫 Cynthia Abarado。我是 MD Anderson 癌症中心生殖泌尿系统肿瘤科的高级专科护士。
### Supportive Management of Cancer-related Symptoms

**Objectives**

Upon completion of this lesson, participants will be able to:

- Identify common disease-related symptoms
- Assess patients for the presence and severity of these symptoms
- Provide appropriate therapeutic interventions to address these issues

I am going to talk to you about supportive management of cancer-related symptoms today. The objectives of this presentation are to identify common disease-related symptoms, assess patients for the presence and severity of these symptoms, and provide appropriate therapeutic interventions to address these issues.

### Supportive Management of Cancer-related Symptoms

**Cancer Pain**

- Pain is one of the most common symptoms associated with cancer.
- Defined as “a sensory and emotional experience associated with an actual or potential tissue damage or described in terms of such damage”

One of the most common cancer-related symptoms is cancer pain. Pain is one of the most common symptoms associated with cancer. The prevalence of pain among patients with cancer varies approximately at 50%, increasing to 75% to 86% with advanced cancer. Pain is defined as a sensory and emotional experience associated with an actual or potential tissue damage described in terms of such damage.

I will introduce the most symptoms of cancer pain. The prevalence of pain among patients with cancer varies approximately at 50%, increasing to 75% to 86% with advanced cancer. Pain is defined as a sensory and emotional experience associated with an actual or potential tissue damage described in terms of such damage.
Supportive Management of Cancer-related Symptoms

Classification of Pain

- **Nociceptive pain**
  - Results from injury to somatic and visceral structures with the resulting activation of nociceptors
  - Described as sharp, well-localized, throbbing or pressure-like (somatic); more diffuse, aching and cramping (visceral)

- **Neuropathic pain**
  - Result of an injury to the peripheral or central nervous system
  - Described as sharp, shooting or burning pain

The two major classification of pain are nociceptive pain and neuropathic pain. Nociceptive pain is described as a result from injury to somatic and visceral structures with the resulting activation of nociceptors. It is often described as sharp, well localized, throbbing or pressure-like, more diffuse, aching and cramping sensation. Neuropathic pain, on the other hand, is the result of an injury to the peripheral or central nervous system described as sharp, shooting, or burning pain.

Pain Assessment

- Pain should be assessed at the initial contact with the patient
- Comprehensive pain assessment:
  - History of pain
  - Pain intensity
  - Location
  - Aggravating factors
  - Alleviating measures
  - Breakthrough
  - Response to therapy
  - How it affects his functioning

Pain assessment should be started or initiated at the initial contact with the patient. It is recommended to perform a comprehensive pain assessment, which includes taking a history of pain, reviewing symptoms related to pain intensity, location, aggravating factors, alleviating measures, and breakthrough pain. It is also important to assess the response to therapy and how it affects the functioning or lifestyle of an individual.
### Supportive Management of Cancer-related Symptoms

#### Tools: Pain Assessment

- Using 0-10 numerical scale
- Pictorial scale
- Wong-Baker faces rating scale
- Physical examination
- Relevant laboratory and imaging studies

Some of the pain assessment tools used for a comprehensive pain assessment are using the 0 to 10 numerical scale, which 0 is no pain and 10 is the worst pain. Also, some other tools include pictorial scale, the Wong-Baker FACES Rating Scale, of course, physical examination and review of relevant laboratory and imaging studies. Pain assessment in nonverbal patients could rather pose a challenge. It requires a multifaceted approach that combines direct observation, family-caregiver input, and evaluation of response to pain medications, or non-pharmacologic interventions. Some of the tools that can be used for the assessment of patients with dementia include review of discomfort in dementia protocol or checklist of non-verbal pain indicators. For patients, however, in intensive care and those who are intubated, some recommended assessment tools include behavioral pain scale, critical pain observation, and, of course, it is very important to take into consideration the cultural and linguistic assessments as part of the comprehensive pain assessment.
## Supportive Management of Cancer-related Symptoms

### Pain Assessment

- It is important to determine underlying cause of pain
- Consideration of oncologic emergencies:
  - Impending fracture
  - Brain metastases
  - Epidural metastases
  - Leptomeningeal metastases
  - Pain related to infection
  - Perforated viscus

Pain assessment is important to determine the underlying cause of pain, so that you can tailor the strategy of pain interventions. Some considerations of oncologic emergencies as cause of pain are related to impending fractures, brain metastases, epidural metastases, leptomeningeal metastases, and pain related to infection or perforated viscus.

### WHO Algorithm for Pain Management

- Most widely accepted algorithm for treatment of cancer pain was developed by the World Health Organization
- Three-step “ladder”

The World Health Organization has a widely accepted algorithm for treatment of cancer pain known as the three-step ladder.

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疼痛评估对于判断疼痛的内在原因并量身定制疼痛干预措施策略较为重要，会造成疼痛的肿瘤学急症包括即将骨折、脑转移、硬膜外转移、软脑脊膜转移以及与感染或脏器穿孔相关的疼痛。

世界卫生组织名为三步阶梯法的癌症止痛原则得到广泛接受。
The World Health Organization recommends non-opioid treatment for mild pain, an addition of a weak opioid plus an adjuvant treatment for pain that is increasing or persisting, and for moderate-to-severe pain, which would be on the third grade or third step, would require a strong opioid plus a non-opioid in addition to adjuvant interventions.

Some of the non-opioids recommended by the World Health Organization in their three-step ladder include aspirin and paracetamol. For mild opioids, they recommend codeine and to consider adjuvant interventions to relieve anxiety. It is also a recommendation to administer pain medications on a scheduled basis rather than on demand. For persistent pain, surgical interventions can be explored.

WHO has developed a three-step "ladder" for cancer pain relief:
- Non-opioids (aspirin and paracetamol)
- Mild opioids (codeine)
- Consider "adjuvants" to relieve anxiety
- Drugs should be given "by the clock", that is every 3-6 hours, rather than "on demand"
- Surgical interventions if pain is not relieved

Some of the non-opioids recommended by the World Health Organization in their three-step ladder include aspirin and paracetamol. For mild opioids, they recommend codeine and to consider adjuvant interventions to relieve anxiety. It is also a recommendation to administer pain medications on a scheduled basis rather than on demand. For persistent pain, surgical interventions can be explored.

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### Supportive Management of Cancer-related Symptoms

#### Pain Management - General Principles

- **Appropriate dose**
  - Determine appropriate oral and parenteral dose equivalents of opioids based on single dose data
- **Maintenance opioid therapy**
  - Use for continuous pain
  - Once 24-hour opioid requirement is stable, change to extended release preparations
  - Continue short-acting opioid for breakthrough pain
  - Give pain medication on regular schedule with supplemental doses for breakthrough pain

Some of the other general principles in pain management include appropriate dosing of analgesics, determining appropriate oral and parenteral dose equivalence of opioids based on single dose data. For maintenance of opioid therapy, it is important to use opioid for management of continuous pain. Once the 24-hour opioid requirement is established, it is recommended to change to extended-release preparations. However, for a breakthrough pain, it is recommended to continue short-acting opioids. It is important to give pain medication, as mentioned, on a scheduled basis with supplemental doses for breakthrough pain.

### Supportive Management of Cancer-related Symptoms

#### NCCN Clinical Practice Guidelines™ Pain Management

- Quantification of pain intensity
- Performance of a formal pain assessment
- Reassessment of pain intensity to measure effectiveness of present treatment
- Psychosocial support
- Patient education

The NCCN Clinical Practice Guidelines™ highlight quantification of pain intensity throughout the continuum of pain management, performance of a formal pain assessment, and reassessment of pain intensity to measure effectiveness of present treatment. And, in addition, support the patient psychosocially and provide patient education.

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NCCN 临床实践指南强调在连续管理疼痛的整个过程中对疼痛强度进行定量、正式评估以及重新评估以测量目前治疗方法的效果。此外还要为患者提供心理方面的支持和教育。

疼痛管理的其他一般原则包括适当的镇痛药物剂量，根据单剂量数据判定口服和胃肠外使用阿片类药物的适当等效剂量。在维持阿片类药物治疗时，务必使用阿片类药物管理持续疼痛。一旦确定了 24 小时阿片类药物需求量，则建议改为长效制剂。但是对于突破性疼痛，建议继续使用短效阿片类药物。对于突破性疼痛，如前述，务必要定期给予止痛药，此外再加上其他补充剂量一起治疗。
### Supportive Management of Cancer-related Symptoms

#### Management: Opioid Side-effects

<table>
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<th>Side Effect</th>
<th>Management</th>
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<tr>
<td>Nausea</td>
<td>Make antiemetics available</td>
</tr>
<tr>
<td>Sedation</td>
<td>Assess for safety and dose adjustment if sedation worsens</td>
</tr>
</tbody>
</table>
| Opioid-induced constipation | Preventive bowel regimen  
- Adequate fluid and dietary intake  
- Stimulate laxative + stool softener (senna + docusate 2 po daily)  
- Reassess for severity and other causes of constipation  
- Titrate laxative as needed |
| Respiratory depression | Use reversing agents cautiously; rule out other causes of neurologic status if not responsive within 10 minutes after naloxone |
| Delirium    | Assess for other causes of delirium, consider changing the opioid, consider haloperidol, 0.5-2 mg po every 4-6 hours or other neuroleptic agents |

Some of the side effects of pain management, such as opioids, could result to nausea, sedation, opioid-induced constipation, some respiration depression, and also some cognitive impairment. For nausea, it is very important to make antiemetics available. For a possibility of sedation, it is important to assess the patient on a continuous basis for safety and dose adjustment if sedation worsens. For opioid-induced constipation, it is recommended to proactively manage the patient with bowel regimens, such as adequate fluid and dietary intake as well as laxatives and stool softeners. One of the highlights of the 2010 NCCN Guidelines™ is to rule out obstruction or bowel obstruction in patients who have persistent constipation. It is important to reassess the severity and other causes of constipation, which can lead to bowel obstruction. And as part of the bowel regimen, it is important to titrate laxatives as needed.

For other opioid side effects such as respiratory depression, it is important to rule out other causes of neurologic status if the patient does not respond to naloxone or Narcan® within 10 minutes, also to assess other underlying symptoms of delirium. Addition of Haldol® 0.5 to 2 mg every 4 to 6 hours or other neuroleptic agents can also help. Other side effects such as motor and cognitive impairment would require some titration and adjustments of the analgesic administration.
Supportive Management of Cancer-related Symptoms

Specific Pain Problems
- Pain associated with inflammation
  - Trial of NSAIDS or glucocorticoids
- Bone pain without oncology emergency
  - NSAIDS and titrate analgesic
  - Consider radiation or nerve block
  - For diffuse bone pain – consider trial of bisphosphonates, hormonal or chemotherapy for responsive tumors
- Nerve compression
  - Trial of glucocorticoids
- Neuropathic pain
  - Trial of antidepressants, anticonvulsants or topical agents

Other specific pain problems, which can compound the whole cancer pain syndrome, would be specific to pain associated with inflammation, bone pain without oncologic emergency, and nerve compression, as well as neuropathic pain. For pain associated with inflammation, a trial of glucocorticoids or NSAIDs are recommended. For bone pain without oncologic emergency, treatment of NSAIDs and other titration of analgesics as well as consideration of radiation or nerve block are also recommended. For diffuse pain that may be responsive to bisphosphonates, hormone, and chemotherapy are also recommended for consideration. And for nerve compression, trial of glucocorticoids is also recommended. Other neuropathic pain could respond to trial of antidepressants, anticonvulsants as well as topical agents.

Supportive Management of Cancer-related Symptoms

Pain Consult
- Complex pain syndromes
- Pain unrelieved by routine management
- Consideration of nerve block

It is also recommended that pain consultation should be sought if a patient's pain is persisting, for complex pain syndromes, as well as for those that are unrelieved by routine management, and for possible consideration of a surgical intervention or a nerve block.

Other specific pain problems, which can compound the whole cancer pain syndrome, would be specific to pain associated with inflammation, bone pain without oncologic emergency, and nerve compression, as well as neuropathic pain. For pain associated with inflammation, a trial of glucocorticoids or NSAIDs are recommended. For bone pain without oncologic emergency, treatment of NSAIDs and other titration of analgesics as well as consideration of radiation or nerve block are also recommended. For diffuse pain that may be responsive to bisphosphonates, hormone, and chemotherapy are also recommended for consideration. And for nerve compression, trial of glucocorticoids is also recommended. Other neuropathic pain could respond to trial of antidepressants, anticonvulsants as well as topical agents.

If a patient's pain is persisting, for complex pain syndromes, as well as for those that are unrelieved by routine management, and for possible consideration of a surgical intervention or a nerve block.

If the patient's pain persists, there is a need for consultation for complex pain syndromes, as well as for those that are unrelieved by routine management, and for possible consideration of a surgical intervention or a nerve block.
Supportive Management of Cancer-related Symptoms

**Psychosocial Support and Patient Education**

- Provide emotional support
- Assist accessing treatment as needed
- Educate patient and family that pain management is a team effort
- Teach coping skills on pain relief, redirect focus on optimizing quality of life
- Provide patient and family education, emphasize the goal of pain management, provide medication list and side-effects, provide a contact number in case of problems

Along with these interventions, psychosocial support and patient education are critical in the comprehensive pain management. It is important to provide emotional support to the patient and to the family; assist them and make sure that the treatment is accessible; providing education to patient and family that pain management is a team effort. Also teaching them coping skills on pain relief and redirecting focus on optimizing quality of life are some of the psychosocial support needs that can help with their coping and having pain. Emphasize the goal of pain management and providing medication lists and side effects of patient medications. Also providing a contact number in case of problems can also alleviate and help patients cope with pain management.

Supportive Management of Cancer-related Symptoms

**Constipation**

- Most common side-effect but not often discussed
- Almost 100% of cancer patients taking pain medications will have constipation
- Most common causes of constipation are inadequate fluid intake and opioids

One of the other side effects of opioid or pain medications is constipation. Almost 100% of cancer patients taking pain medications will have constipation. And constipation affects everyone across the life span. It affects around 2% to 28% of the total population, which equals to around 63 million. So, it is very important to really assess the pain – the side effects of pain in terms of constipation. And the role of constipation risk assessment really is a proactive approach in prevention of development of constipation.

与上述干预措施一样，社会心理支持和患者教育也是全面疼痛管理的重要组成部分。务必向患者及其家人提供情感上的支持，协助他们并确保患者能够得到治疗；教育患者及家人疼痛管理需要团队协作。同时帮助他们应对疼痛的部分社会心理支持需要包括教授他们缓解疼痛的技巧，以及将其注意力转到尽可能提高生活质量。强调疼痛管理的目标，提供药物清单以及患者药物的副作用。此外，提供联系电话以便应急，这也可以帮助患者应对疼痛。

阿片类药物或止痛药的另外一项副作用是便秘。使用止痛药的癌症患者几乎 100% 都会出现便秘。所有癌症患者在有生之年都会有便秘问题。便秘大约影响到整个人群的 2% 至 28%，大概相当于 630 万人。因此，切实评估作为疼痛副作用的便秘非常重要。而便秘风险评估是预防便秘的积极措施。
**Supportive Management of Cancer-related Symptoms**

### Constipation Risk Assessment

- Identify patients at risk for constipation using a constipation risk assessment tool (example: Constipation Risk Assessment Scale by Janice Richmond)
- Other constipation risk assessment tools
  - Norgine Risk Assessment
  - The Eton Scale

It is important to identify patients at risk for constipation using some systematic constipation risk assessment scale. And one of this constipation risk assessment scale is by Janice Richmond. Some other constipation risk assessment tools are Norgine Risk Assessment and the Eton Scale Assessment.

### Nutritional Strategies for Managing Constipation

- Increased dietary fiber and fluid intake
- Encourage oral fluids at least 8-10 glasses of fluids daily
- Recommend mobility and adequate exercise
- Limit gas-forming foods and beverages
- Recommend bulking agents and/or stool softeners, if appropriate
- Laxatives essential for opioid induced constipation

There are a lot of preventive or nutritional strategies that can be implemented or developed by healthcare providers in managing constipation. And some of these are increasing dietary fiber and fluid intake, encouraging oral fluids, at least 8 to 10 glasses of fluids a day, recommending mobility and adequate exercises, recommending bulking agents and/or stool softeners if appropriate, and also using laxatives that are essential for opioid-induced constipation, and, of course, limiting gas-forming foods and beverages.

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重要的是要使用某些系统的便秘风险评估工具，识别哪些患者存在便秘风险。其中一个工具是由 Janice Richmond 制定的便秘风险评估表。其他一些便秘风险评估工具是 Norgine 风险评估和 Eton 量表评估。

医务人员在管理便秘时可以实施或制定很多预防或营养策略。其中部分措施包括增加膳食纤维和液体摄取量，鼓励口服液体，至少每天 8 至 10 杯液体，建议活动身体并充分锻炼，建议在适当使用大便膨胀剂和/或软化剂，并且使用针对阿片类药物所引起的便秘的泻剂。当然，还要限制摄食产气食物和饮料。
Supportive Management of Cancer-related Symptoms

Cancer-related Fatigue

- Distressing persistent, subjective sense of tiredness or exhaustion related to cancer or cancer treatment that is not proportional to recent activity and interferes with usual functioning.

Incidence: Affects 70 – 100% of cancer patients
Prevalence: 75% among patients with metastatic disease
Patients perceive fatigue as the most distressing symptom associated with cancer and cancer treatments.

The other cancer-related symptom that I am going to talk about is cancer-related fatigue. Fatigue is defined as a distressing, persistent, subjective sense of tiredness or exhaustion related to cancer or cancer treatment that is not proportional to recent activity and interferes with usual functioning.

Supportive Management of Cancer-related Symptoms

Cancer-related Fatigue

- Incidence: Affects 70 – 100% of cancer patients
- Prevalence: 75% among patients with metastatic disease
- Patients perceive fatigue as the most distressing symptom associated with cancer and cancer treatments.

It is prevalent among 75% of patients with metastatic disease and affects 70% to 100% of cancer patients. Patients perceive fatigue as the most distressing symptom associated with cancer and cancer treatments.

我要介绍的另一个癌症相关症状是癌症相关的疲劳。疲劳的定义是与癌症或癌症治疗相关的疲倦或力竭的持续性不快主观感觉，这种感觉与近期活动不成正比，会干扰一般机体功能。

癌症转移患者的 75% ，癌症患者的 70% 到 100% 会出现疲劳。患者认为疲劳是带来最大困扰的癌症及癌症治疗相关症状。
### Supportive Management of Cancer-related Symptoms

#### Pathophysiology: Cancer-related Fatigue

- Exact explanation of physiology is unknown
- Multi-factorial explanations
- Stress/stress response model
- Neurophysiologic model involving the brain and the spinal cord
- Endogenous tumor necrosis factor
- Multidimensional fatigue framework

The exact cause or pathophysiology of cancer-related fatigue is rather unexplained or unknown, but a lot of factors come into play. And some of these are stress, which is the basis of the stress/stress response model, the neurophysiologic model involving the brain and the spinal cord. And some endogenous tumor necrosis factor. But the most common explanation that is in the literature is the multi-dimensional fatigue framework.

#### Neurophysiologic Model of Fatigue

- Impairment of peripheral nervous system or its component can cause impaired peripheral nerve function in transmission to the neuromuscular junction, thereby affecting nerve fiber activation
- Impairment of the central component causes lack of motivation, impaired spinal cord transmission, and malfunction of the brain cells in the hypothalamic region

The neurophysiological model of fatigue explains fatigue as an impairment of peripheral nervous system or its component causing impaired peripheral nerve function in transmission to the neuromuscular junction thereby affecting nerve fiber activation. Also, it describes impairment of the central or component causing lack of motivation, impaired spinal cord transmission, and malfunction of the brain cells in the hypothalamic region.

### 翻译

癌症相关疲劳的确切病因或病理生理学原理尚不明或未知，但涉及到许多因素。其中部分因素包括压力，即压力/压力应答模式的基础；涉及大脑和脊髓的神经生理学模式。还有内源性肿瘤坏死因素。但在文献中最常见的解释是多层面疲劳框架。

疲劳的神经生理学模式将疲劳解释为外周神经系统或其组成部分出现障碍，造成外周神经向神经肌肉节点传输信号的功能受损，从而影响神经纤维的活化。它还描述了中枢神经或组成部分发生障碍，造成缺乏动机，脊髓信号传输受损以及下丘脑区的脑细胞功能异常。
Supportive Management of Cancer-related Symptoms

Role of Tumor Necrosis Factor

- Reduction in skeletal muscle protein stores resulting from endogenous TNF or from TNF administered as antineoplastic therapy resulting in muscle wasting.

The role of the tumor necrosis factor is described as a reduction in skeletal muscle protein stores resulting from endogenous tumor necrosis factor or from the TNF administered as an antineoplastic therapy resulting in muscle wasting.

Supportive Management of Cancer-related Symptoms

Multidimensional Framework of Fatigue

- Interaction of various factors:
  - Biochemical
  - Treatment
  - Accumulation of metabolites
  - Changes in transmission

Some of the interactions of different factors are included in the multi-dimensional framework of fatigue and these are biochemical factors, which could be in the treatment and affecting the accumulation of metabolites, changes in transmission.

多维度的疲劳框架包括了不同因素的相互作用，这些因素可以是治疗中的生物化学因素，它们可影响代谢物的累积，信号传输的改变。
**Supportive Management of Cancer-related Symptoms**

**Multidimensional Framework of Fatigue**

- **Physiologic**
  - Changes in energy level, activity/rest, sleep/wake cycles
  - Oxygenation
  - Unique circadian rhythms
- **Behavioral**
  - Psychological factor
  - Life events
  - Social factors
  - Environmental
  - Symptoms

Some other factors involve physiologic factors such as oxygenation and alterations in energy level, activity, rest, sleep and wake cycles as well as behavioral. Some psychological factors can contribute to fatigue, such as life events, social factors, environmental factors and other specific symptoms.

**Supportive Management of Cancer-related Symptoms**

**Contributing Factors to Fatigue**

- Cancer treatment
- Anemia
- Medications
- Cachexia/anorexia
- Metabolic disturbances
- Hormone deficiency
- Psychological distress
- Sleep disturbances
- Excessive inactivity
- Pulmonary impairment
- Neuromuscular dysfunction
- Pain
- Infection
- Comorbidities
- Metabolic disturbances
- Hormone deficiency
- Psychological distress
- Sleep disturbances
- Excessive inactivity
- Pulmonary impairment
- Neuromuscular dysfunction
- Pain
- Infection
- Comorbidities

Some of the contributing factors that are explained in different review of literature relate to cancer treatment, anemia, medications, cachexia, anorexia, metabolic disturbances, hormone deficiency, psychological distress, sleep disturbances, excessive inactivity, pulmonary impairment, neuromuscular dysfunction, pain, infection, and comorbidities.

其他一些因素包括生理因素，例如氧合，以及能量水平、活动、休息、睡眠和清醒周期以及行为的改变。一些社会心理因素可助长疲劳，例如生活事件、社交因素、环境因素和其他特定症状。

不同文献对于某些疲劳助长因素的解释涉及以下几个方面：癌症治疗、贫血、药物、恶病质、厌食、代谢紊乱、激素缺乏、精神困扰、睡眠障碍、过度缺乏运动、肺功能受损、神经肌肉功能障碍、疼痛、感染和并发病。
### Supportive Management of Cancer-related Symptoms

#### Cancer Therapies and Fatigue

- Chemotherapy
- Radiation therapy
- Biologic response modifiers
- Surgery
- Target therapies
- Disease state
- Combination of treatment modalities

Some of the cancer therapies that could cause fatigue are chemotherapy, radiation therapy, some biologic response modifiers, even surgery, some target therapies, the disease state itself and combination of treatment modalities.

可造成疲劳的部分癌症治疗包括化疗、放疗、某些生物应答调节剂、手术、某些靶向治疗、疾病本身状态和治疗方法的合并作用。

#### Signs and Symptoms of Fatigue

- Physical symptoms
- Psychological symptoms
- Cognitive changes
- Behavioral changes
- Functional status decline

Some specific signs and symptoms of fatigue are broadly related to physical symptoms, psychological symptoms, cognitive changes, behavioral changes, as well as functional status decline.

疲劳特有的部分体征和症状与身体症状、心理症状、认知行为改变、行为改变以及功能状态下降等广泛相关。
### Supportive Management of Cancer-related Symptoms

**Differential Diagnosis**
- Underlying cardiopulmonary, renal, neurologic, endocrine, infectious, and hematologic etiology
- Fluid/electrolyte imbalances
- Malnutrition
- Psychological distress

It is very important to consider other differential diagnoses such as underlying cardiopulmonary, renal, neurologic, endocrine, infectious, and hematologic etiology that can cause fatigue. Some of these are fluid electrolyte imbalances as well, malnutrition, and psychological distress.

**Assessment of Fatigue**
- Screen patients for fatigue as vital signs at regular intervals
- “How would you rate your fatigue on a scale 0-10 over the past 7 days?”
  - None to mild – 0-3;
  - Moderate – 4-6;
  - Severe – 7-10

The NCCN Guidelines™ recommends screening patients for fatigue as vital signs at regular intervals. Often they recommend asking the patient, “How would you rate your fatigue on a scale 0 to 10 over the past 7 days?” None to mild would be 0 to 3, moderate 4 to 6 and severe would be 7 to 10.

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<thead>
<tr>
<th>Supportive Management of Cancer-related Symptoms</th>
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<tr>
<td><strong>Assessment of Fatigue</strong></td>
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<tr>
<td>• Complete primary evaluation</td>
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<tr>
<td>• Fatigue score 4-10</td>
</tr>
<tr>
<td>- Focused history</td>
</tr>
<tr>
<td>- Review of systems</td>
</tr>
<tr>
<td>- Assessment of treatable contributing factors</td>
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For those patients who have a fatigue score of 4 to 10, NCCN™ recommends a focused history, review of systems, and assessment of treatable contributing factors.

<table>
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<tr>
<th>Supportive Management of Cancer-related Symptoms</th>
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<tr>
<td><strong>Interventions – Patients Experiencing Fatigue on Active Treatments</strong></td>
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<tr>
<td>• Nonpharmacologic</td>
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<tr>
<td>- Activity enhancement</td>
</tr>
<tr>
<td>- Psychosocial interventions</td>
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<tr>
<td>- Attention restoring therapy</td>
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<td>- Nutritional support</td>
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<td>- Sleep therapy</td>
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<tr>
<td>- Family interaction</td>
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<tr>
<td>- Energy conservation</td>
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<tr>
<td>- Diversional Activities</td>
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<tr>
<td>- Education/Counseling</td>
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</table>

Some of the other non-pharmacologic interventions or strategies that can help alleviate fatigue are activity enhancement, some psychosocial interventions in terms of support, attention restoring therapy, nutritional support, sleep therapy, family interaction, energy conservation, as well as diversional activities, and, of course, education and counseling.

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疲劳分数为 4 到 10 分的患者，NCCN™ 建议有重点地采集病史，查看症状以及评估可治疗的助长因素。

其他可以帮助缓解疲劳的非药物干预措施或策略包括加强活动、某些支持性的社会心理干预措施、注意力恢复疗法、营养支持、睡眠疗法、家庭互动、节省体能以及娱乐活动，当然还包括教育和咨询。
### Supportive Management of Cancer-related Symptoms

#### Interventions of Fatigue
- Pharmacologic
- Psychostimulants – methylphenidate
- Anemia treatment
- Sleep medications

Other interventions would of course include pharmacologic such as psychostimulants and most of the patients consider Ritalin® or methylphenidate, treatment of anemia, and other sleep medications.

### Supportive Management of Cancer-related Symptoms

#### Assessment Tools for Fatigue
- Brief Fatigue Inventory
- The Functional Assessment of Cancer Therapy-anemia
- The Functional Assessment of Cancer Therapy-fatigue
- Piper Fatigue Self-report Scale
- The Schwartz Cancer Fatigue Scale
- The Profile of Mood States Fatigue or Inertia Subscale
- Lee’s Visual Analogue Scale for Fatigue
- Cancer Fatigue Scale

There are also a lot of systematic assessment tools for fatigue and some of these are: Brief Fatigue Inventory; Functional Assessment of Cancer Therapy, such as specific for anemia; The Functional Assessment of Cancer Therapy, specific for fatigue; Piper Fatigue Self- Report Scale; Schwartz Cancer Fatigue Scale; Fatigue Symptom Inventory; the Profile of Mood States Fatigue or Inertia Subscale; and Lee’s Visual Analog Scale for fatigue; as well as Cancer Fatigue Scale.

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### Supportive Management of Cancer-related Symptoms

#### Brief Fatigue Inventory (BFI)

- **Assessment Areas:** Severity of fatigue and the impact of fatigue on daily functioning in the past 24 hours
- **Method:** Self-report, interview, or via an interactive voice response system (IVR)
- **Time required:** 5 minutes
- **Scoring:** A global fatigue score can be obtained by averaging all the items on the BFI

One of the most common assessment tools is the Brief Fatigue Inventory. This is a tool that assesses the severity of fatigue and the impact of fatigue on daily functioning in the past 24 hours. It is a self-report by interview or via an interactive voice response system and usually requires only 5 minutes. A global fatigue score can be obtained by averaging all the items in the Brief Fatigue Inventory Tool.

#### Brief Fatigue Inventory (BFI) (continued)

- **Reliability:** Cronbach's alpha reliability ranges from 0.82 to 0.97 and they have psychometrically validated tools in different language versions.
- **Available in multiple languages**
  - English
  - Chinese (simplified)
  - German
  - Japanese
  - Korean

It has a reliability of Cronbach’s Alpha Reliability ranging from 0.82 to 0.97 and they have psychometrically validated tools in different language versions.

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<td>最常见的评估工具之一是简易疲劳量表。该工具评估疲劳的严重程度以及疲劳在过去 24 小时对日常机能的影响。该工具通过面谈或互动式语音应答系统由患者自我报告，通常仅需要 5 分钟。可以通过简易疲劳量表工具所有项目平均值得到全面的疲劳分数。</td>
<td>其可用性可信赖，克隆巴赫信度系数范围为 0.82 至 0.97，并且有经过心理测验验证的多种语言版本工具。</td>
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### Supportive Management of Cancer-related Symptoms

#### Cancer-related Nutritional Issues

Malnutrition in cancer is a common problem that plays a significant role in adverse outcomes, including mortality and morbidity.

The next topic would be a cancer-related symptom as it relates to the nutritional issues. Malnutrition in cancer is a common problem that plays a significant role in adverse outcomes including mortality and morbidity.

接下來的主題是涉及營養問題的癌症相關症狀。營養不良是癌症的常見問題，對於包括死亡率和發病率在内的不良轉歸有着重要作用。

<table>
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It is the best indicator for nutritional risk among cancer patients. Weight loss of 5% or greater in 1 month or greater than 10% in 6 months is significant. Weight loss is a prognostic indicator of survival and response to treatment, as well as quality of life.

这是癌症患者營養風險的最佳指示因素。體重在1个月内降低5%或更多，或者在6个月内降低10%以上則屬嚴重的營養風險。體重下降是生存、治療效果以及生活質量的預後指示因素。
### Supportive Management of Cancer-related Symptoms

#### Cancer-related Nutritional Issues

- Weight loss
- Fatigue
- Nausea and vomiting
- Taste alterations
- Oral mucositis
- Constipation
- Diarrhea
- Dry mouth (xerostomia)
- Loss of appetite
- Cachexia

Some of cancer-related nutritional status --- or nutritional issues rather are weight loss, fatigue, nausea and vomiting, taste alterations, oral mucositis, constipation, diarrhea, xerostomia or dry mouth, loss of appetite, and cachexia.

#### Nutritional Strategies for Managing Weight Loss

- Increase calorie and protein intake by eating favorite foods
- Encourage the addition of high-calorie and high-protein food and snacks
- Physical activity to stimulate appetite

Some strategies for managing weight loss include increasing calorie and protein intake by eating favorite foods, encourage patients addition of high-calorie and high-protein food and snacks, as well as physical activity to stimulate appetite.

部分癌症相关营养问题包括体重下降、疲劳、恶心和呕吐、味觉改变、口腔黏膜炎、便秘、腹泻、口干、食欲不振和恶病质。

管理体重下降的部分策略包括进食可口的食物以增加热量和蛋白质的摄取，鼓励患者加食高热量、高蛋白食物和点心，以及增加身体活动以增加食欲。
### Supportive Management of Cancer-related Symptoms

#### Conclusions

- Cancer patients frequently experience pain, malnutrition, and fatigue.
- Constipation is also frequently encountered particularly for patients receiving a narcotic for pain control.
- Assessment and treatment of these symptoms are important in improving the quality of life for cancer patients.

So, in conclusion, we have discussed cancer-related symptoms as they relate to pain, malnutrition, and fatigue. Constipation is a frequently encountered problem especially for patients receiving narcotics for pain control. Assessment and treatment of these symptoms are important in improving the quality of life for cancer patients as well as improving patient outcomes. We would like to appreciate your feedback on this presentation and you can e-mail us. Thank you very much.

综上所述，我们讨论了涉及疼痛、营养不良和疲劳的癌症相关症状。便秘是常常遇到的问题，尤其是接受麻醉止痛药的患者。评估和治疗这些症状对于提高癌症患者的生活质量，改善患者的转归非常重要。我们很希望听取各位对本次讲座的意见。大家可以给我们发电子邮件。非常感谢。