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ESPEN Guideline

ESPEN guidelines on nutrition in cancer patients☆

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SUMMARY

Cancers are among the leading causes of morbidity and mortality worldwide, and the number of new cases is expected to rise significantly over the next decades. At the same time, all types of cancer treatment, such as surgery, radiation therapy, and pharmacological therapies are improving in sophistication, precision and in the power to target specific characteristics of individual cancers. Thus, while many cancers may still not be cured they may be converted to chronic diseases. All of these treatments, however, are impeded or precluded by the frequent development of malnutrition and metabolic derangements in cancer patients, induced by the tumor or by its treatment.

These evidence-based guidelines were developed to translate current best evidence and expert opinion into recommendations for multi-disciplinary teams responsible for identification, prevention, and treatment of reversible elements of malnutrition in adult cancer patients.

The guidelines were commissioned and financially supported by ESPEN and by the European Partnership for Action Against Cancer (EPAAC), an EU level initiative. Members of the guideline group were selected by ESPEN to include a range of professions and fields of expertise.

☆ These guidelines have been officially endorsed by the European Society of Surgical Oncology (ESSO), the European Association for Palliative care (EAPC) and the Chinese Society of Clinical Oncology (CSCO).

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Hematopoietic stem cell transplantation
Palliative care
Nutrition assessment
Nutrition therapy
Exercise training

We searched for meta-analyses, systematic reviews and comparative studies based on clinical questions according to the PICO format. The evidence was evaluated and merged to develop clinical recommendations using the GRADE method. Due to the deficits in the available evidence, relevant still open questions were listed and should be addressed by future studies.

Malnutrition and a loss of muscle mass are frequent in cancer patients and have a negative effect on clinical outcome. They may be driven by inadequate food intake, decreased physical activity and catabolic metabolic derangements. To screen for, prevent, assess in detail, monitor and treat malnutrition standard operating procedures, responsibilities and a quality control process should be established at each institution involved in treating cancer patients.

All cancer patients should be screened regularly for the risk or the presence of malnutrition. In all patients – with the exception of end of life care – energy and substrate requirements should be met by offering in a step-wise manner nutritional interventions from counseling to parenteral nutrition. However, benefits and risks of nutritional interventions have to be balanced with special consideration in patients with advanced disease. Nutritional care should always be accompanied by exercise training. To counter malnutrition in patients with advanced cancer there are few pharmacological agents and pharmaconutrients with only limited effects. Cancer survivors should engage in regular physical activity and adopt a prudent diet.

GL Nutrition in Cancer Patients – Outline

Abbreviations used

AML	acute myeloic leukemia
ASCO	American Society of Clinical Oncology
BCAA	branched-chain amino acids
BIA	bio impedance analysis
BMI	body mass index
BMT	bone marrow transplantation
BMR	basal metabolic rate
CHT	chemotherapy
CRP	C-reactive protein
d	day
DEXA	dual-energy x-ray absorptiometry
DHA	22:6 docosahexaenoic acid
ECOG	Eastern Cooperative Oncology Group
EAPC	European Association for Palliative Care
EFSA	European Food Safety Authority
EN	enteral nutrition
EPA	20:5 eicosapentaenoic acid
ERAS	enhanced recovery after surgery
ESMO	European Society for Medical Oncology
FDA	U.S. Food and Drug Agency
GI	gastrointestinal
GL	guideline
GPS	Glasgow Prognostic Score
GvHD	graft versus host disease
HCT	hematopoietic stem cell transplantation
HMB	ß-hydroxy methyl butyrate
HTA	16:4 hexadecatetraenoic acid
IGF-I	insulin-like growth factor I
ISOO	International Society of Oral Oncology
LOS	length of hospital stay (days)
MA	megestrol acetate
MASCC	Multinational Association of Supportive Care in Cancer
mGPS	modified Glasgow Prognostic Score
MNA	Mini Nutritional Assessment
MNI	Medical Nutrition International
MST	Malnutrition Screening Tool
MUST	Malnutrition Universal Screening Tool
NSAID	non-steroidal anti-inflammatory drugs
NSCLC	non-small cell lung cancer
ONS	oral nutritional supplements
N-3 fatty acids	polyunsaturated fatty acids of the N-3 or omega-3 series
PAL	physical activity level
PEG	percutaneous endoscopic gastrostomy
PG-SGA	patient-generated Subjective Global Assessment
PICO	populations of interest, interventions, comparisons, outcomes
PN	parenteral nutrition
QoL	quality of life
RCT	randomized controlled trial
REE	resting energy expenditure
RT	radiotherapy
SARM	selective androgen receptor modulator
SGA	Subjective Global Assessment

Chapter O: Methods

O1. Basic information

1. Terms and abbreviations

A "***cancer patient***" is a patient with a cancer diagnosis who is either waiting for or on cancer directed treatment, on symptomatic treatment, and/or receiving palliative care.

Patients cured from their cancer are termed "***cancer survivors***".

"***Pharmaconutrients***" are nutrients supplied in pharmacological doses to modulate immune and metabolic functions and exert effects on clinical outcome.