Cancer and Nutrition
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Nutritional Issues in Palliative Cancer Care: targeted interventions and increasing role of classification (EPCRC et al)

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Nutritional Issues
caring for advanced cancer patients

Identify and treat patients with pre-cachexia

Find reversible Secondary – Nutrition Impact Symptoms

Counsel the patients to eat more who will gain strength

Use mechanism-tailored drugs for responsive patients

Perform goal-directed, reachable, educational interventions

Alleviate distress from symptoms and losses

Include family members in care plan

Palliative Care: Key issues are nutrition-relevant

Assessment in daily practice

multidimensional – interdisciplinary – multilevel - modular

Management of symptomes and syndromes

Pain

Anorexia - Cachexia - Fatigue

Anxiety - Depression – Delirium - Distress

Nausea – Vomiting – Constipation

Shortness of breath – Cough

Communication

„Bad news“ – „double way“

Families – Network

Double role family members, complex networks

End-of-Life preparation and care

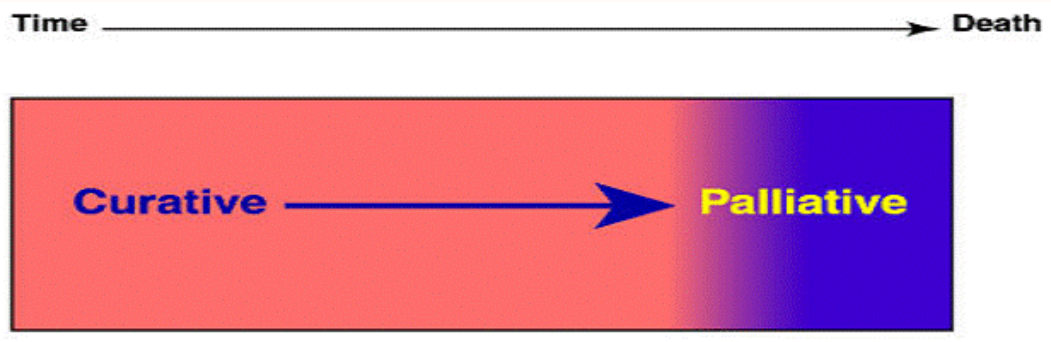
Decision making procedures – Patients‘ will – „finish business“

Terminal syndromes and management

Tailored service models

Adapted from Foley K et al. IOM report

From End-of-Life-Care to Palliative Cancer Care



Traditional View

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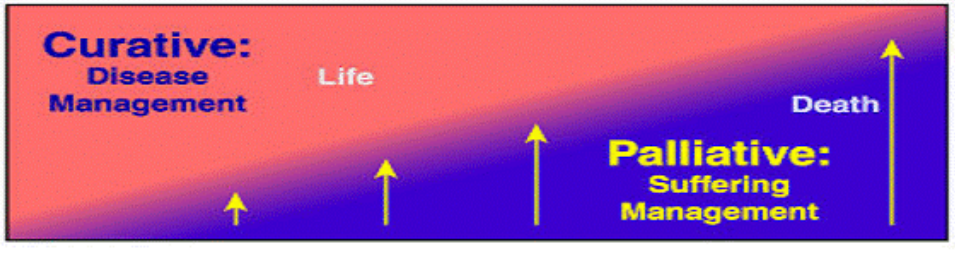
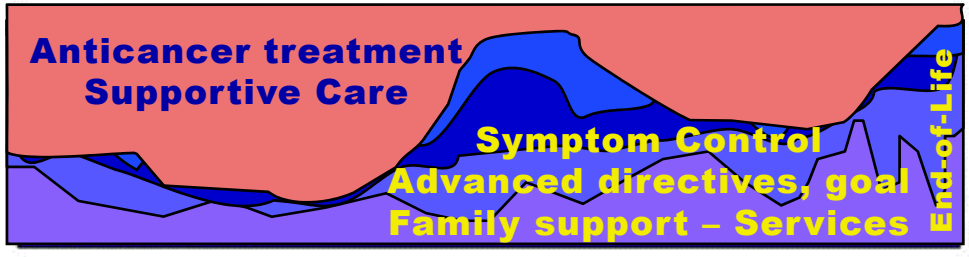


Revised



Palliative Cancer Care

>= 2008

Initial slide courtesy of Michael Fisch, adapted by Florian Strasser

ESMO Policy on Supportive and Palliative Care: Definitions

Supportive care: care that aims to optimize, the comfort, function and social support of the patient and their family at all stages of the illness.

Palliative care: care that aims to optimize, the comfort, function and social support of the patient and their family when cure is not possible.

End of life care: palliative care when death is imminent

ESMO-Designated Centers for Integrated Oncology and Palliative Care

1	The center provides closely integrated oncology and palliative care clinical services.
2	The center is committed to a philosophy of continuity of care and non-abandonment.
3	The center provides high-level home care with expert back-up and coordination of home care supports and has an infrastructure that responds with appropriate interventions in a timely manner.
4	The center incorporates programmatic support of family members including children.
5	The center provides routine patient assessment of physical and psychological symptoms and social supports and has an infrastructure that responds with appropriate interventions in a timely manner.
6	The center incorporates expert medical and nursing care in the evaluation and relief of pain and other physical symptoms.
7	The center incorporates expert care in the evaluation and relief of psychological and existential distress.
8	The center provides emergency care of inadequately relieved physical and psychological symptoms.
9	The center provides facilities and expert care for in-patient symptom stabilization.
10	The center provides respite care for ambulatory patients for patients unable to cope at home or in cases of family fatigue.
11	The center provides facilities and expert care for in-patient end-of-life care and is committed to providing adequate relief of suffering for dying patients.
12	The center participates in basic or clinical research related to the quality-of-life of cancer patients.
13	The center is involved in clinician education to improve the integration of oncology and palliative care.

2009: updatedc riteria

Manu-script on DC history

www.esmo.org

ASCO: Palliative Cancer Care

Frank D. Ferris, Eduardo Bruera, Nathan Cherny, Charmaine Cummings, David Currow, Deborah Dudgeon, Nora JanJan, Florian Strasser, Charles F. von Gunten, and Jamie H. Von Roenn. Palliative Cancer Care a Decade Later: Accomplishments, the Need, Next Steps – from the American Society of Clinical Oncology. J Clin Oncol *In press*

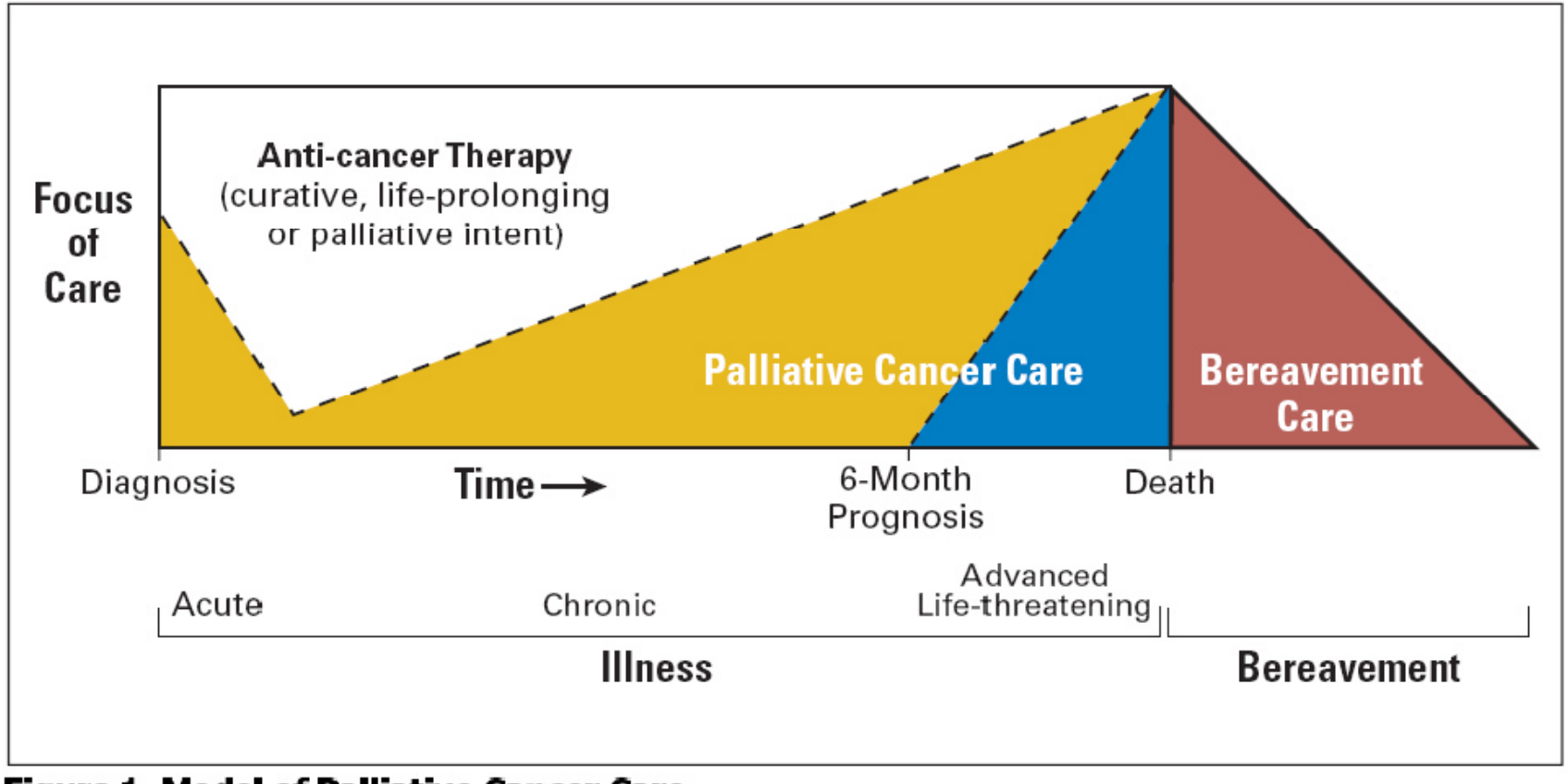


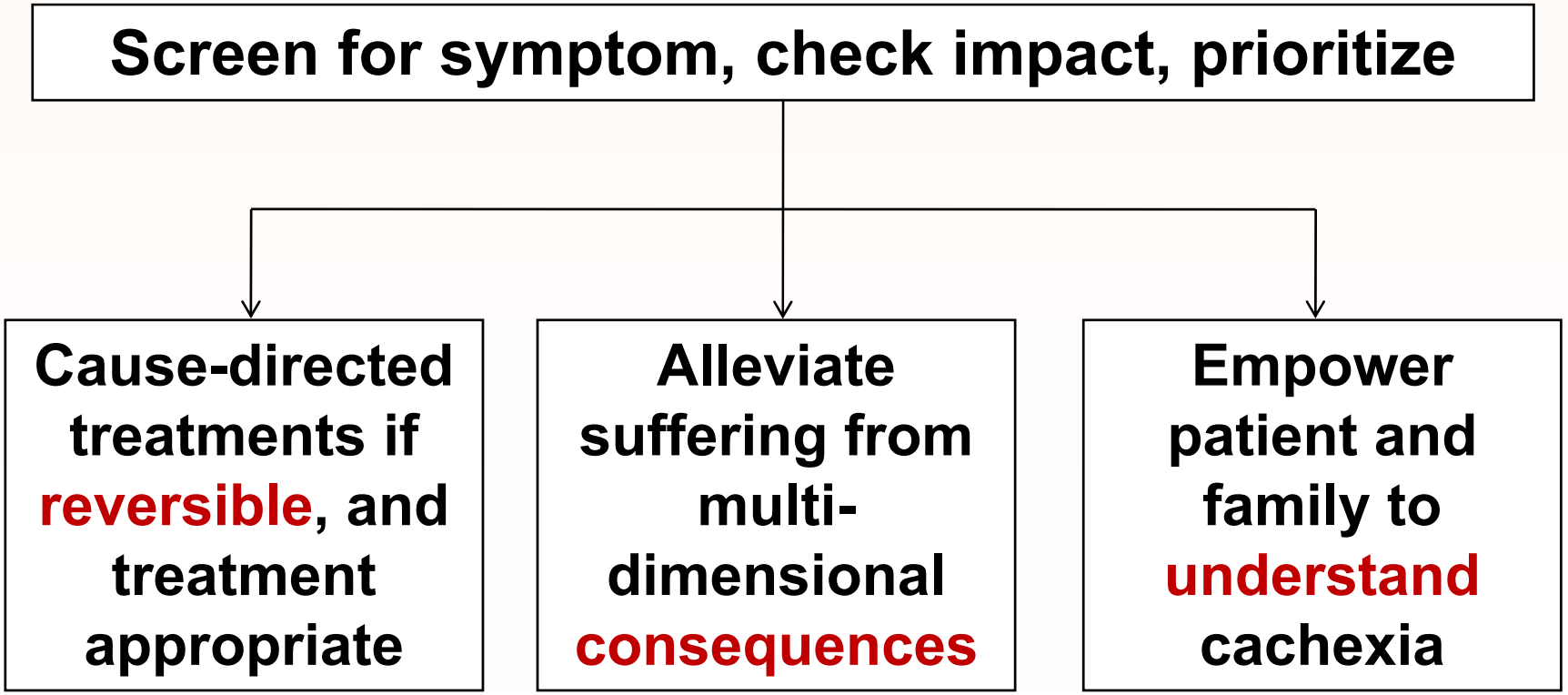
Figure 1. Model of Palliative Cancer Care.

Conclusion 1:

To deal with nutritional issues of advanced cancer patients

→ Requires key components of Palliative Cancer Care

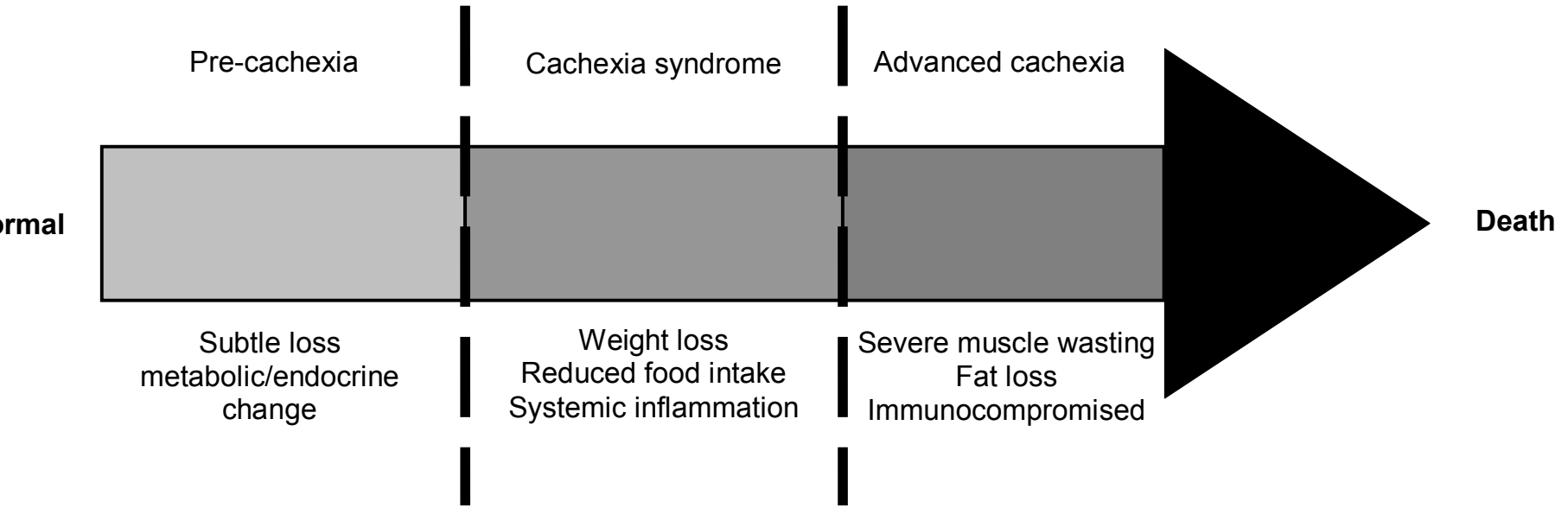
Interventions for „nutritional“ issues in palliative cancer care



Diagnosis and multidimensional assessment of cachexia and its impact: far more than weight loss

How to guide interventions[1]:
Cancer Cachexia Phases

Spectrum ranging from early to late cachexia.
Not all patients will progress down the spectrum.



Fearon K. Eur J Cancer 2008; 2008;44,1124-32

How to guide interventions[2]:

Secondary Nutrition-Impact Symptoms

Nausea	Stomatitis
Vomiting	Dysgeusia
Constipation	Dental problems
Diarrhea	Difficulty chewing
Defecation after meal	Dysosmia
Pain	Xerostomia
Dyspnoea	Thick saliva
Fatigue	Dysphagia
Anxiety/depression	Epigastric pain
Sense of hopelessness	Abdominal pain

Specific symptoms & complications impacting nutrition

Many frequent symptoms and complications in Palliative Cancer Care can contribute to Cachexia

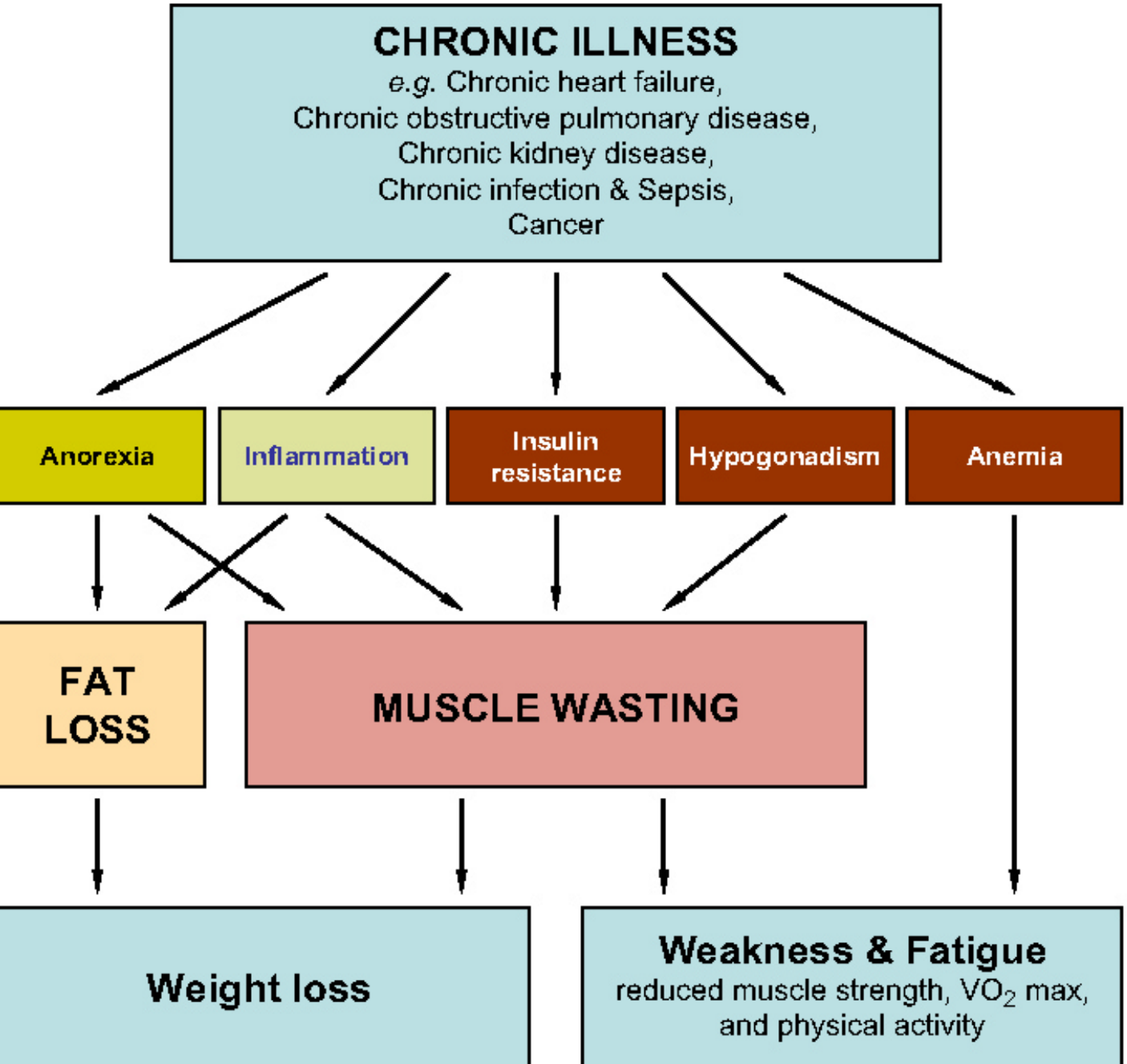
Ihr **Appetit** kann **negativ beeinflusst** werden durch **verschiedene Probleme.**
Bitte beantworten Sie die folgenden Fragen, indem Sie die **Zahl** ankreuzen,
die **am besten** auf Sie **zutrifft.**

I have no appetite or decreased ability to eat because :	Überhaupt nicht	Wenig	Mässig	Sehr
Weil ich an einer Entzündung im Mund leide (Stomatitis):	1	2	3	4
Weil mein Geschmackssinn gestört ist (Dysgeusie):	1	2	3	4
Weil ich an einer Schluckstörung leide (Dysphagie):				
Weil ich Schmerzen im Magen habe:				
Weil ich Schmerzen im Bauch habe:				
Weil ich an einer Entzündung im Mund leide (Stomatitis)				
Weil ich verstopft bin (Appetit ist besser nach Stuhlgang)				
Weil ich Durchfall habe:				
Weil ich direkt nach dem Essen (zu) viel Stuhlgang habe				
Weil ich starke Schmerzen habe und nicht Essen kann:	1	2	3	4
Weil ich starke Atemnot habe und nicht Essen kann:	1	2	3	4
Weil ich starke Müdigkeit habe und nicht Essen kann:	1	2	3	4

Daily practice: Checklist of S-NIS

Direct (semi-) quantitative questions

Post-pilot version, part of routine care



Generic Definition of Wasting / Cachexia

Evans WJ et al. Cachexia: A new definition. Clin Nutr 2008 Aug 19.

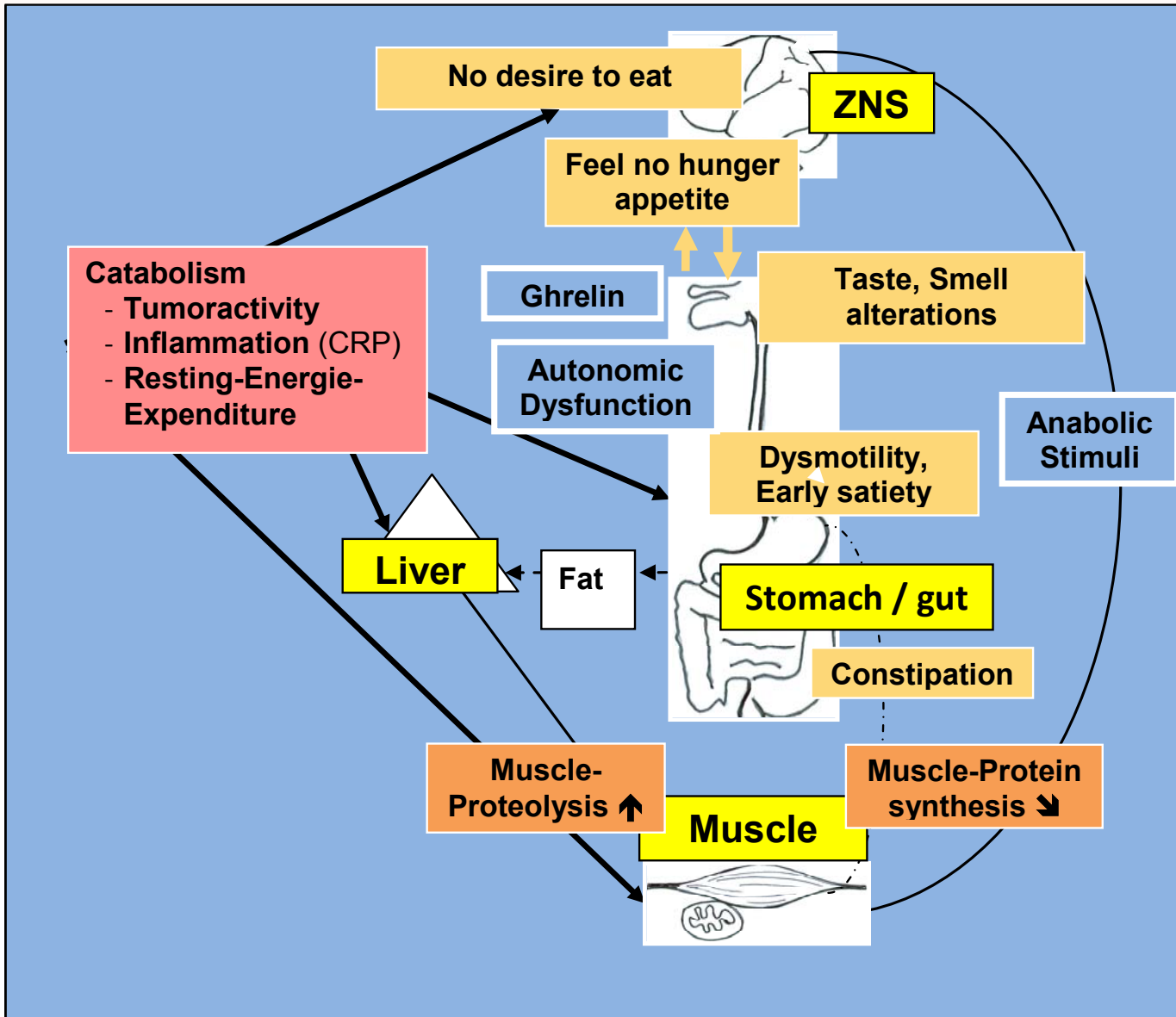
How to guide interventions[3]: Cancer Cachexia

„Appetite“

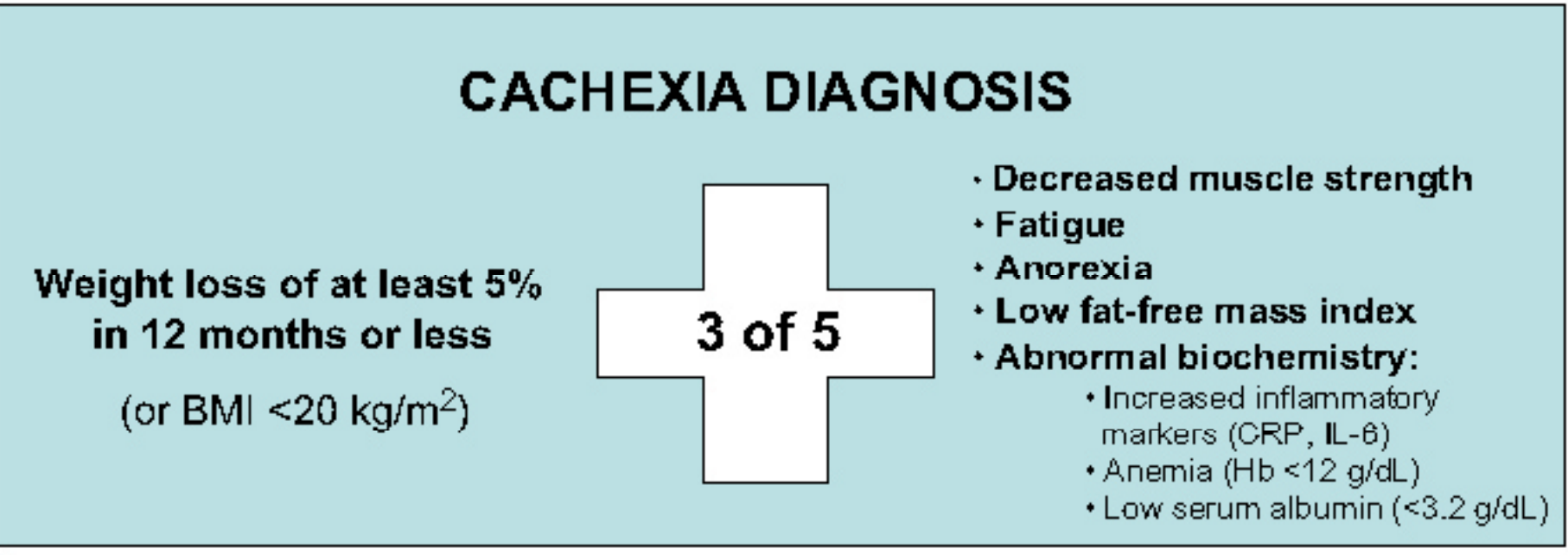
Catabolism

Muscle

Genetic markers in Development



Generic Definition of Wasting / Cachexia[1]



In cancer patients:

→Fatigue is an omnipresent symptom[2]

→ Always tumor: inflammation (CRP>5mg/dl) **omnipresent?**

1: Evans WJ et al. Cachexia: A new definition. Clin Nutr 2008 Aug 19.

2: Strasser F. Diagnostic Criteria of Cachexia and their Assessment: Decreased Muscle Strength and Fatigue. Curr Opin Clin Nutr Metab Care 2008;11(4):417-21

Generic Definition of Wasting / Cachexia

Table 1 Diagnostic criteria for wasting disease (cachexia) in adults

Weight loss of at least 5%* in 12 months or less in the presence of underlying illness**, PLUS THREE of the following criteria:
- Decreased muscle strength (lowest tertile[38,39])
- Fatigue***
- Anorexia[27]****
- Low fat-free mass index[40,41,#]
- Abnormal biochemistry
  a) increased inflammatory markers CRP (>5.0 mg/l), IL-6 >4.0 pg/ml)[42]
  b) Anemia (<12 g/dl)
  c) Low serum albumin (<3.2 g/dl)

Evans WJ et al. Cachexia: A new definition. Clin Nutr 2008

The literature on cachexia is growing but still somewhat limited. This is particularly true of specific diagnostic criteria. The criteria below, represents the clinical experiences of the clinicians on the consensus panel and the limited data on patients with cachexia. Th following needs to be excluded: starvation, malabsorption, primary depression, hyperthyroidism and age-related loss of muscle mass Edema-free.

*In cases where weight loss cannot be documents a BMI <20.0 kg/m^2 is sufficient.

**Fatigue is defined as physical and/or mental weariness resulting from exertion; an inability to continue exercise at the same intensit with a resultant deterioration in performance.[18]

***Limited food intake (i.e. total caloric intake less than 20 kcal/kg body weight/d; <70% of usual food intake) or poor appetite.

Lean tissue depletion (i.e. mid upper arm muscle circumference <10th percentile for age and gender; appendicle skeletal muscle inde by DEXA (kg/m^2) by DXA <5.45 in females and <7.25 in males.

→ To guide clinical practice interventions and clinical trails in Palliative Cancer Care: Cancer-specific classification building on generic definition is needed

Classification & Assessment of Cancer Cachexia
European Palliative Care Research Collaborative

Determine the content of the cachexia assessment tool based upon (a *variable*[2] combination of)

a) the literature (Systematic Literature Review)
b) the content of widely used forms
c) the clinical expert experience
d) advice from an expert panel (Delphi – procedure)

Reflection and prospective validation in clinical realities of Palliative Cancer Care until death

1: Kaasa S et al. J Clin Oncol 2008
2: SLR in Pall Care, BMC Palliative 2008

EPCRC: Classification of cancer cachexia

Definition of Cancer Cachexia

Cancer cachexia is a multifactorial syndrome defined by a negative protein and energy balance driven by a variable combination of reduced food intake and abnormal metabolism.

A key defining feature is ongoing loss of skeletal muscle mass which cannot be fully reversed by conventional nutritional support, leading to progressive functional impairment.

→Clinical Cachexia Expert consensus, Delphi procedure

EPCRC: Classification of cancer cachexia

Cancer Cachexia Diagnosis

In the absence of simple starvation, cancer cachexia (excluding pre-cachexia) is diagnosed by involuntary weight loss >5% over the last 6 months. Weight loss should be ongoing in the last 1 – 2 months.

In patients with significant fluid retention, large tumor mass or obesity (BMI >30kg/m^2) significant muscle wasting may occur in the absence of weight loss. In such patients a direct measure of muscularity is recommended.

→ Clinical Cachexia Expert consensus, ongoing Delphi procedure

EPCRC: Classification of cancer cachexia

Cancer Cachexia Domains

The following key components are of high value for clinical assessment of cancer cachexia:

- **Anorexia/ ▼food intake** (central, chemosensory, gut)
- **Catabolic drive** (Tumor, Inflammation, Hypogonadism)
- **Decreased muscle mass and strength**
- **Impact of cachexia** (Distress, Physical function)
- **Other factors** (e.g. anemia, loss of fat mass)

→ Clinical Cachexia Expert consensus, ongoing Delphi procedure

EPCRC: Classification of cancer cachexia

Cancer Cachexia Late Phase

Patients with late (irreversible) cancer cachexia have advanced muscle wasting (with or without loss of fat).

Patients have a low performance status and short life expectancy (<3months).

It is evident that the burden of artificial nutritional support would outweigh any potential benefit. Therapeutic interventions focus typically on alleviating the consequences/complications of cachexia, e.g. symptom control (appetite stimulation, nausea), eating-related distress of patients and families.

→ Clinical Cachexia Expert consensus, ongoing Delphi procedure

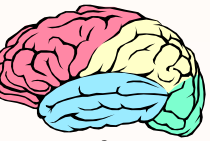
How to guide interventions[3]: Cancer Cachexia

Variables needed for clinical decision-making:

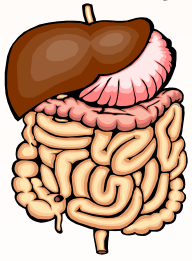
	Past	Present	Future
torage	**Individual usual weight** (in absence of obesity equal to ideal weight)	**Gap of usual to current (depleted) muscle mass and nutrients**	**Muscle mass required fo patients' meaningful physical function**
ntake	**Usual eating habits and dietary preferences**	**Current amount, quality and route of nutritional intake**	**Achievable (target) nutritional intake, percentage of needed**
erformance	**Pre – cancer usual performance status**	**Current cancer - and cachexia – related performance status**	**Patients' priorities and life goals, achievable activity**
otential	**Tumor-type and anticancer treatment history**	**Current degree of catabolism (by tumor, inflammation, lack of anabolic stimuli)**	**Expected life span (prognosis estimation) and control of catabolism**

How to guide interventions[4]

Targeted pharmacological Interventions



Appetitestimulation

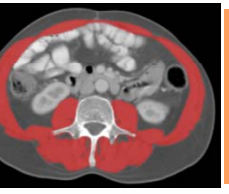


Stimulation gastro-intestinal Motility

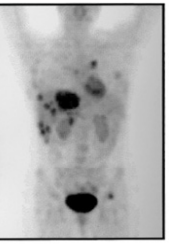
Melanocortin-Antagonists
Olanzapine
Ghrelin and Analoga

Anti-Myostatin
Beta-2-Mimetics
SARM‘s, Oxandrolone
Proteasome-inhibitors

Insulin
Creatine, Amino-Acids
Angiotensin-II-inhibitors
ATP-Adenosine



Anabolic Metabolism Muscleproteins



Anti – Inflammation Tumorprogression

Anti-TNF, anti-IL-6
Melatonin
Thalidomide, Lenalinomide

How to guide interventions[5-7]

Counsel, educate, alleviate, include family

Cognitive control of eating[1]

Understand catabolic process (fabric talk) and gastrointestinal dysmotility (small stomach talk)

Find other means to express love and caring[2]

Transient use of progestins for appetite, of corticosteroids for fatigue

Work with families to prepare for the worst and hope for the best, express emotions[2]

1: Shragge JE, Wismer WV, Olson KL, Baracos VE. Shifting to conscious control: psychosocial and dietary management of anorexia by patients with advanced cancer. *Palliat Med* 2007;21: 227-33
2: Renz M et al. J Clin Oncol 2009;27:146-9; Pollak KI et al. J Clin Oncol 2007;25:5745-8; Strasser F et al. J Clin Oncol 2002;20:3352-5; Runkle C et al. J Psychosoc Oncol 2008;26:81-95; Back AL et al. Cancer 2008;113:1897-910.

How to guide interventions[5-7]

Help patients to understand experiences

Symptoms in cachexia assessment: „A family of distinct characters“

A Symptoms mirroring the pathogenesis of cachexia

Early satiety, appetite loss, no desire to eat, weakness

B Symptoms & syndromes causing simple starvation

Pain, vomiting, dyspnea,

C Symptoms reflecting the impact of cachexia

Fatigue, eating-related distress

In Conclusion:

Nutritional issues include a spectrum from pre-cachexia to late irreversible cachexia

A cancer-specific cachexia classification (definition, diagnosis, key components) builds on the generic wasting/cachexia definition

Practice-guiding multidimensional assessments may harmonize collaborative clinical standards and build a backbone of quality clinical research

Tailored interventions (cause-specific, alleviating, family) include nutrition, pharmaceutical agents, education, and counseling

Thank you!

→Thanks to many collaborating colleagues and societies

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