EUROPEAN CANCER PATIENT COALITION

Hôpital Erasme

ULB

The role of nutrition in fighting cancer

André Van Gossum, MD, PhD

Clinic of Intestinal Diseases and Nutritional Support
Department of Gastroenterology, Erasme Hospital
Brussels, Belgium

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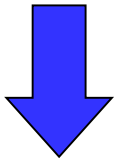
Definition of anorexia

“Anorexia is a loss of appetite or lack of desire to eat”

(Harrison’s Principles of Internal Medicine, XVII edition)



Pathologically persistent satiety

Anorexia is a component of cachexia

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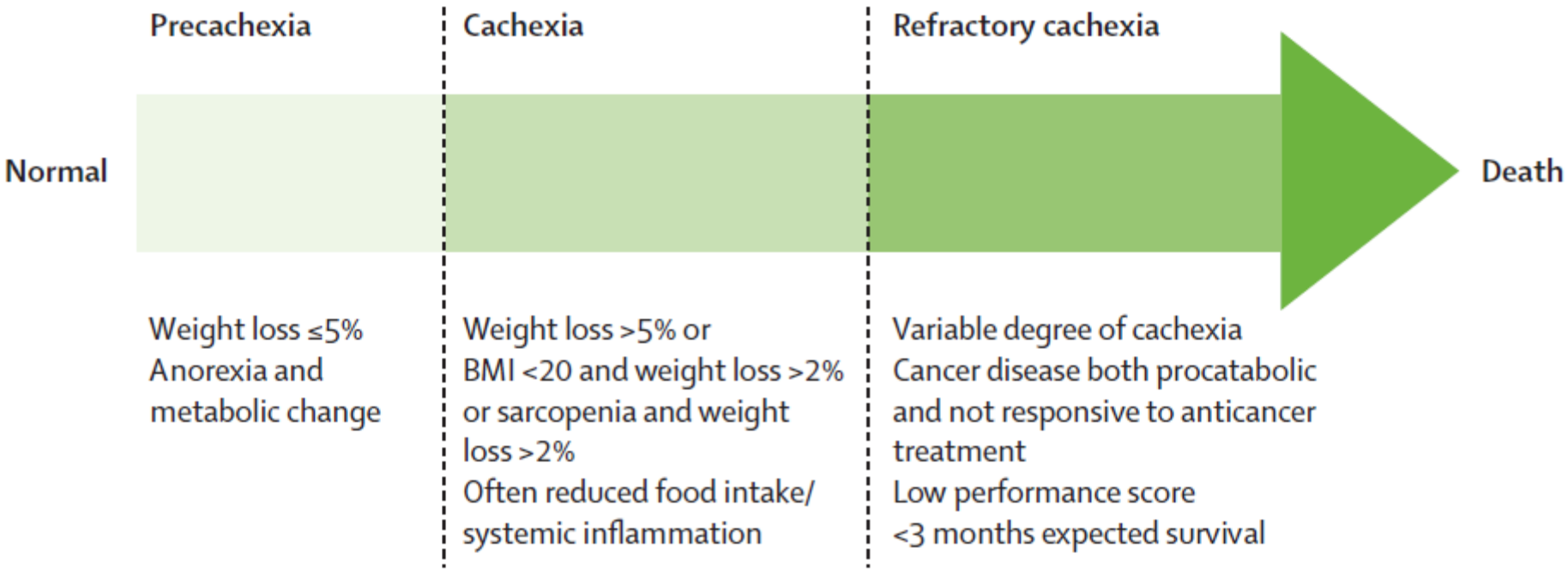
Consensus findings

Definition and diagnosis

Cancer cachexia is defined as a multifactorial syndrome characterised by an ongoing loss of skeletal muscle mass (with or without loss of fat mass) that cannot be fully reversed by conventional nutritional support and leads to progressive functional impairment. The pathophysiology is characterised by a negative protein and energy balance driven by a variable combination of reduced food intake and abnormal metabolism. Consensus statements for diagnosis are presented in the panel.

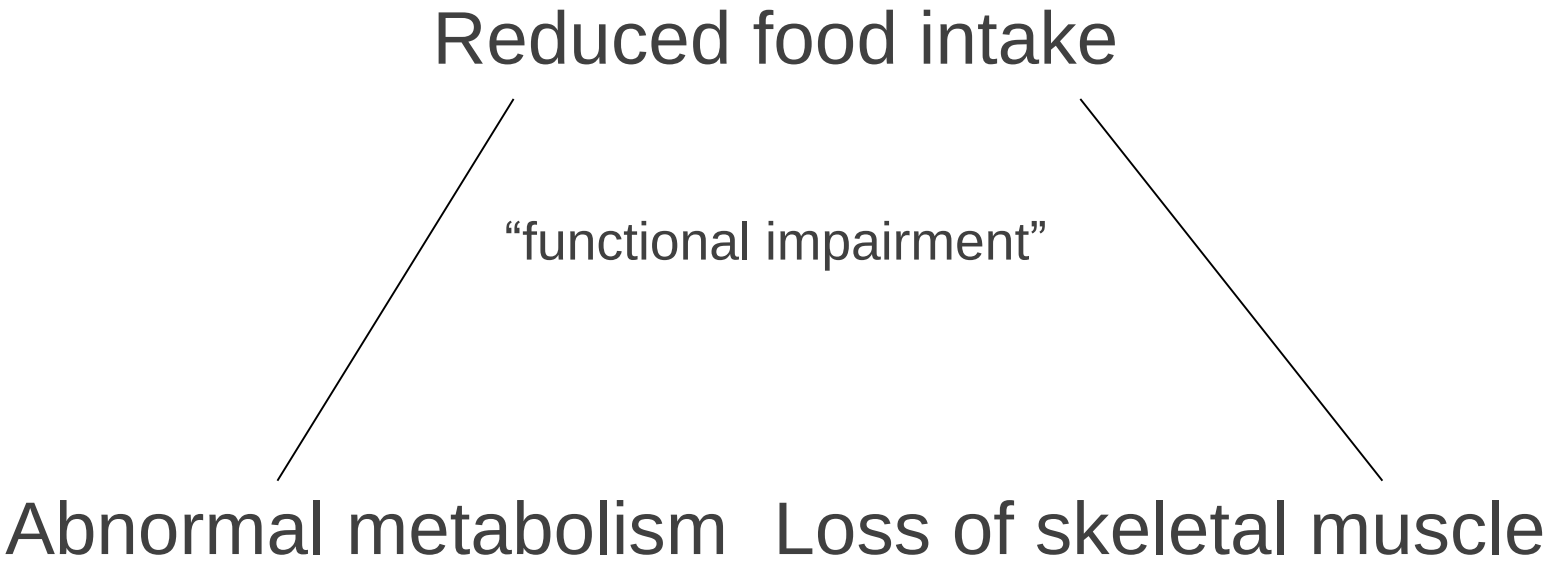
Fearon K et al. Lancet Oncol 2011; 12:489-495

Stages of cancer cachexia



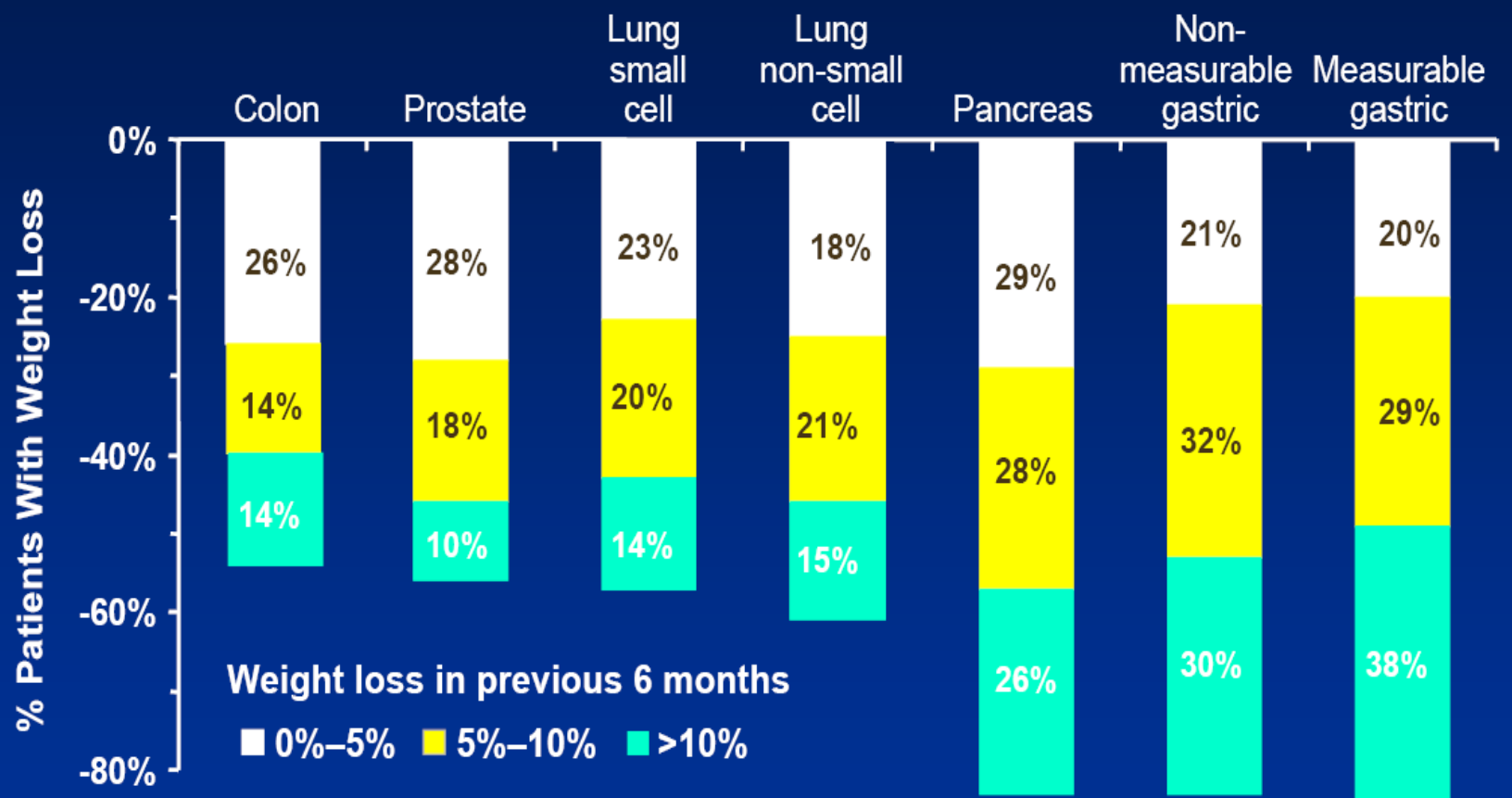
Fearon K et al. Lancet Oncol 2011; 12:489-495

Cancer cachexia



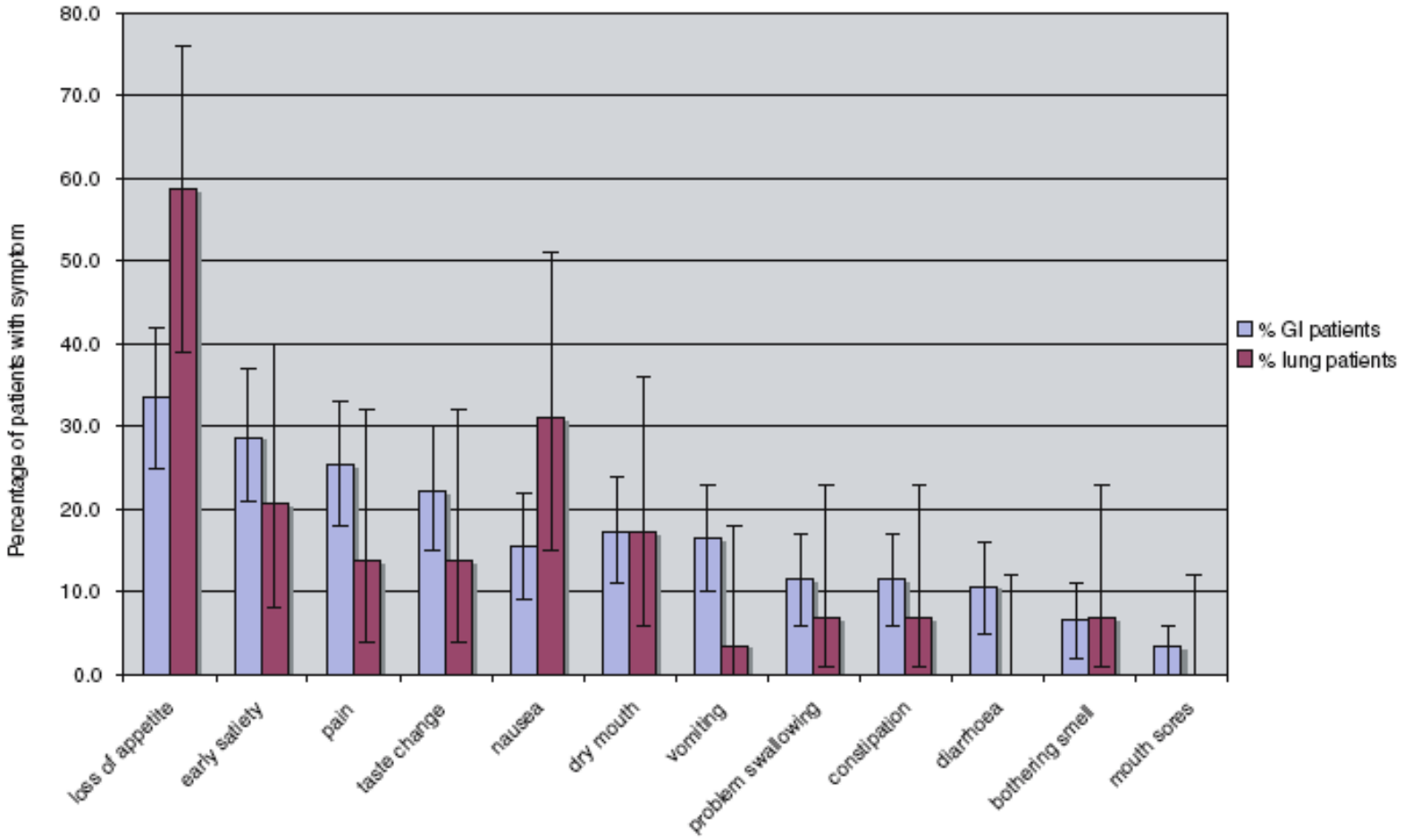
Fearon et al, Lancet Oncol 2011

Frequency/Severity of Weight Loss Associated with Cancer



DeWys et al: Am J Med 1980;69:491

Symptoms at presentation of lung and GI cancer



Khalid U et al. Support Care Cancer 2007; 15:39-46

Support Care Cancer (2004) 12:246–252
DOI 10.1007/s00520-003-0568-z

ORIGINAL ARTICLE

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Paula Ravasco
Isabel Monteiro-Grillo
Pedro Marques Vidal
Maria E. Camilo

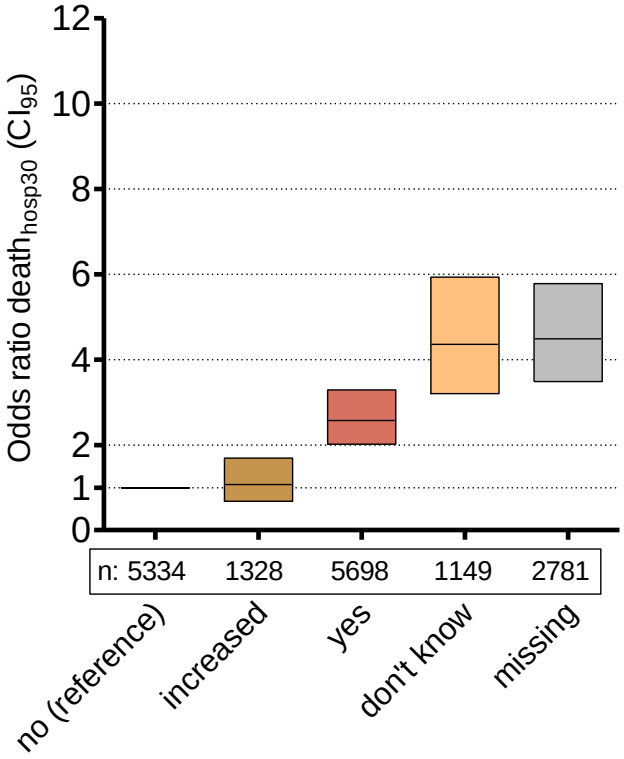
Cancer: disease and nutrition are key determinants of patients' quality of life

QoL function scores are determined:

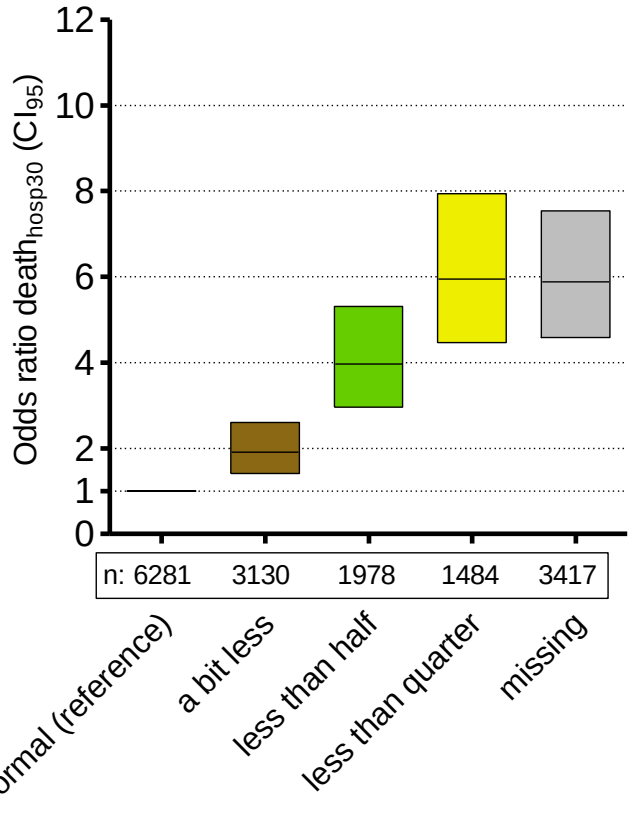
- cancer location (30%)
- nutritional intake (20%)
- weight loss (30%)
- chemotherapy (10%)
- surgery (6%)
- disease duration (3%)
- stage of disease (1%)

Impact of anorexia on mortality

Have you lost weight unintentionally within the last 3 months?



How well have you eaten during the last week?



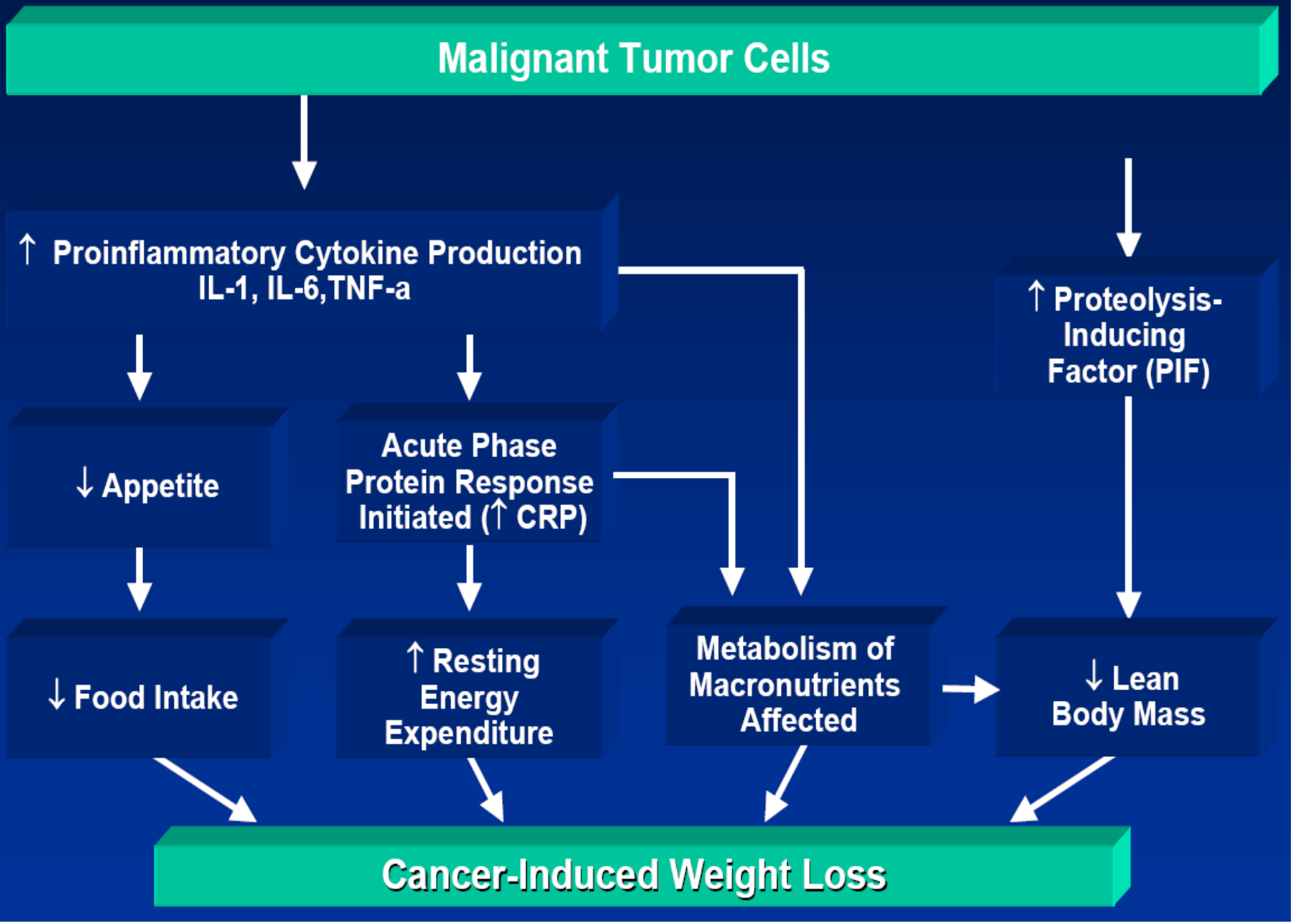
Hiesmayr M et al. Clin Nutr 2009; 28:484-91

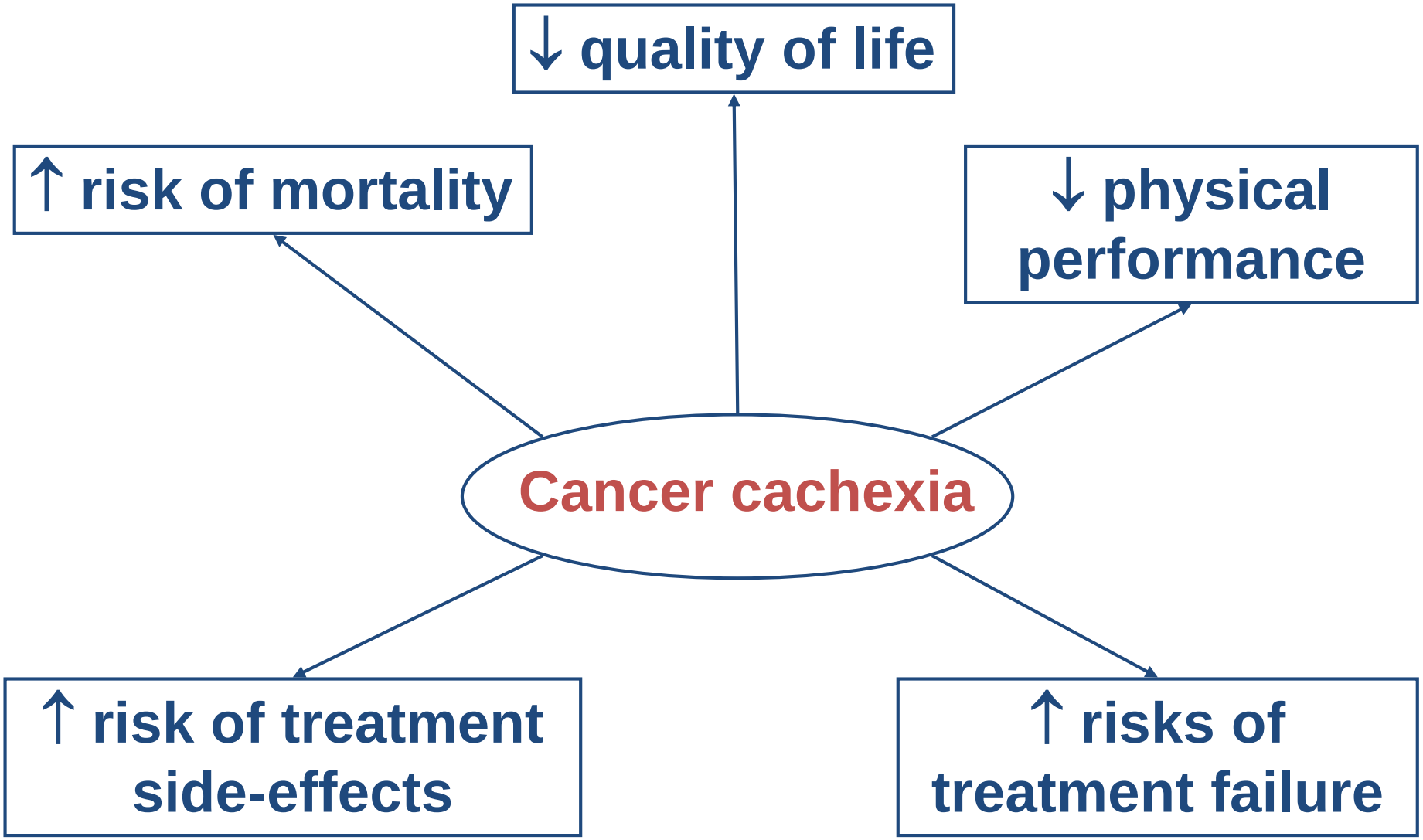
Factors associated with increased risk of death in cancer patients

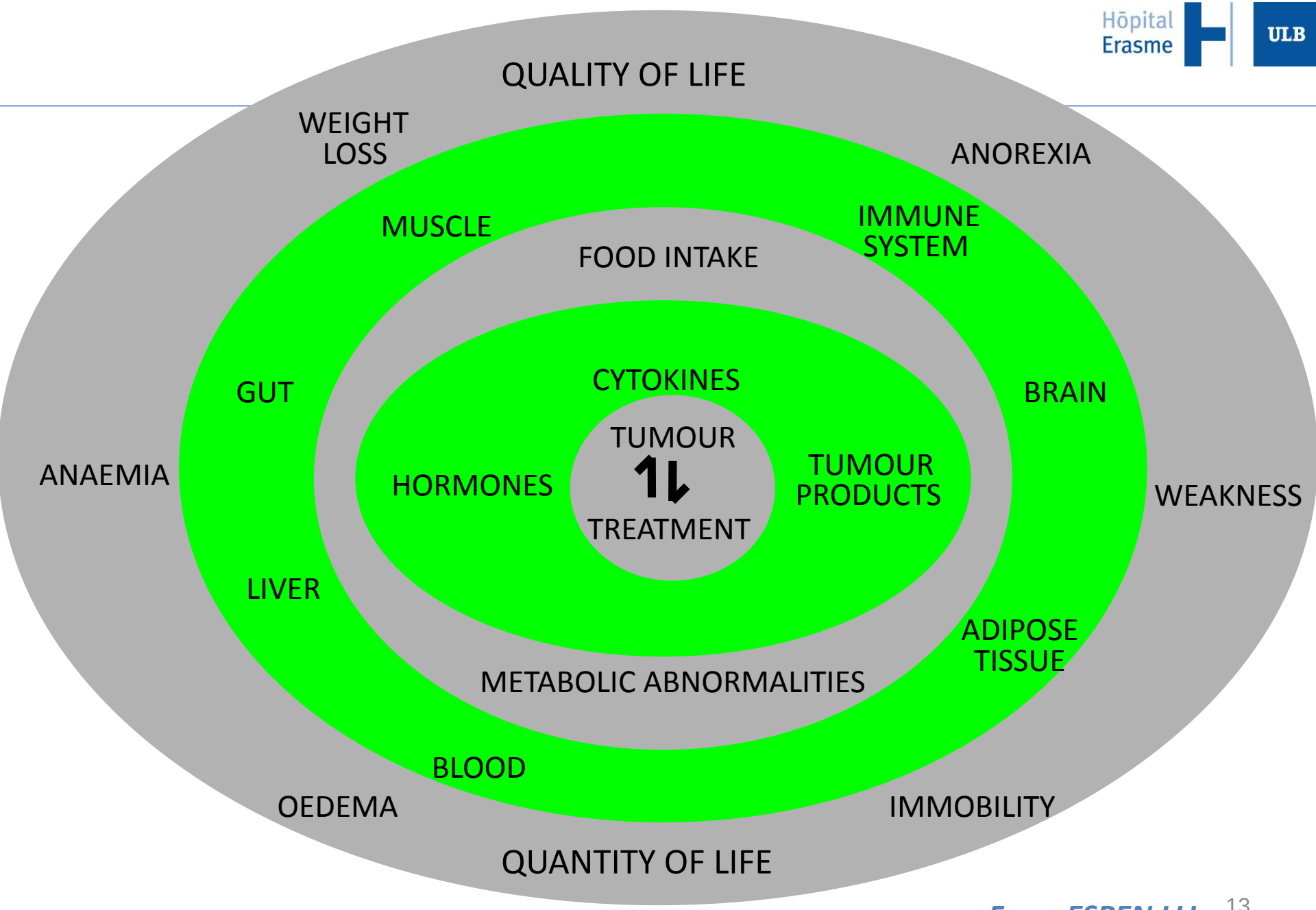
Survival after referral (n=549)	**HR**	**95% CI**	***P*-value**
Performance status (per 1 point increase)	1.4	1.3-1.6	<0.001
Gender (M/W)	1.3	1.1-1.6	0.012
Dysphagia (Yes/No)	1.3	1.0-1.6	0.05
Early satiety (Yes/No)	1.3	1.1-1.5	0.01

Walsh D et al, Support Care Cancer 10:385-388, 2002

Pathogenesis of Cancer Cachexia




↓ quality of life
↑ risk of mortality
↓ physical performance
Cancer cachexia
↑ risk of treatment side-effects
↑ risks of treatment failure



From ESPEN LLL

Parameters to be used

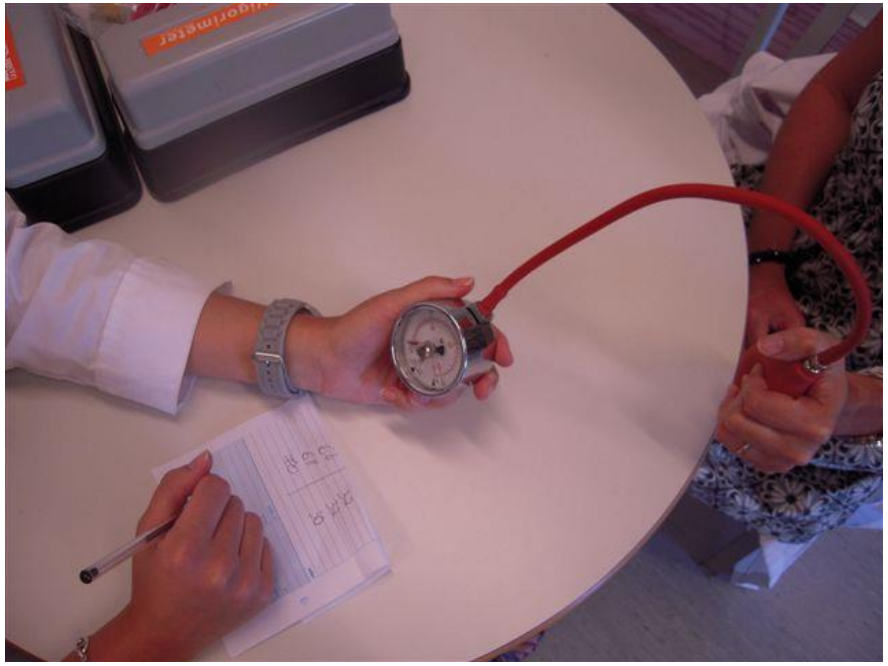
Daily practice

- Food intake
- Loss of appetite
- Lack of desire to eat
- Fatigue
- Body weight (dynamic)
- BMI
- Physical exam (muscle / subcutaneous fat)

Parameters to be used
More sophisticated

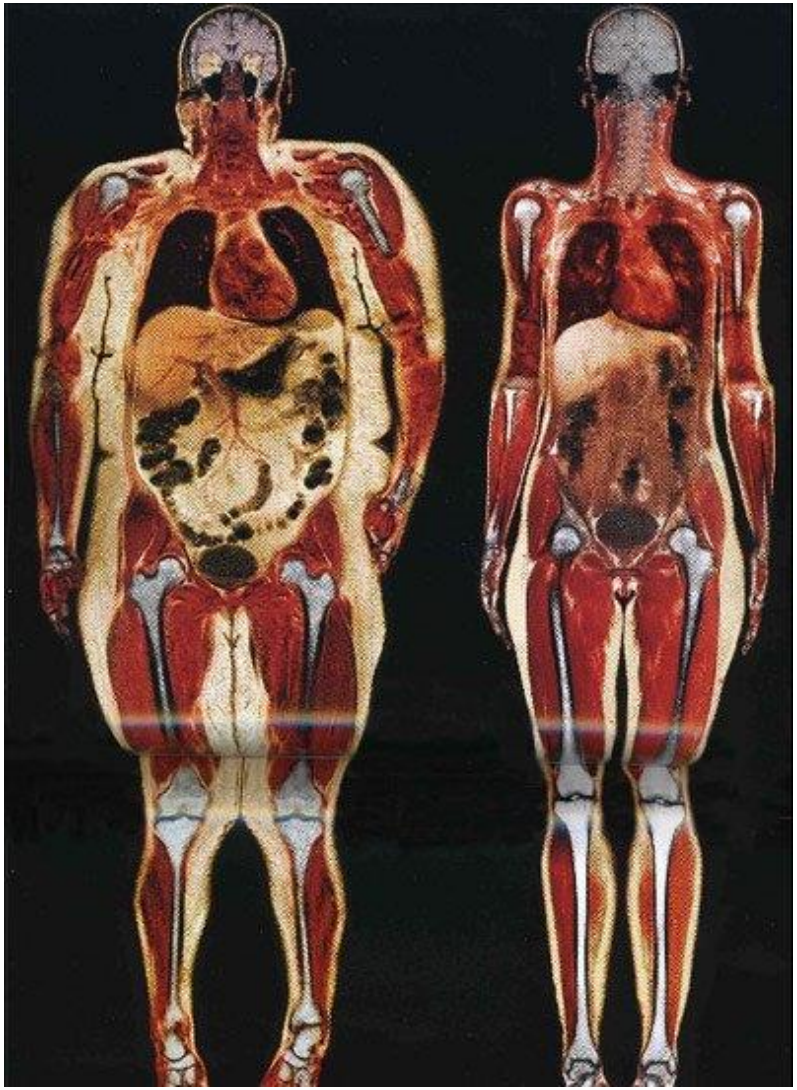
- Hand-grip dynamometry
- Body composition (fat-free mass)
- Muscle “density” (CT scan)

Hand grip dynamometry



Body composition

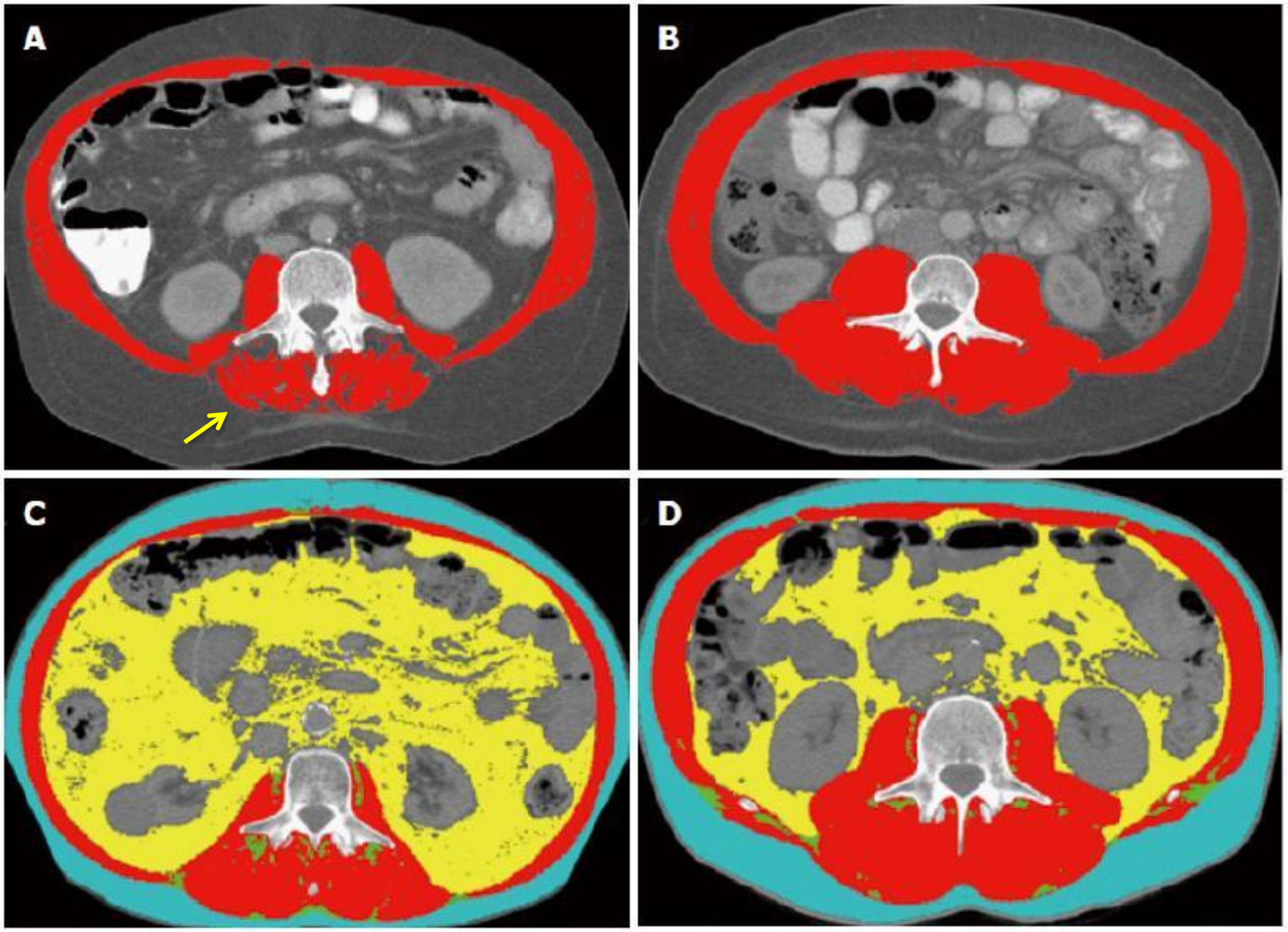
- ↓ Treatments efficacy
- ↑ Cancer recurrence
  Poorer prognosis



From Ravasco Paula

CT scan (L3) muscle density

(from V. Baracos)



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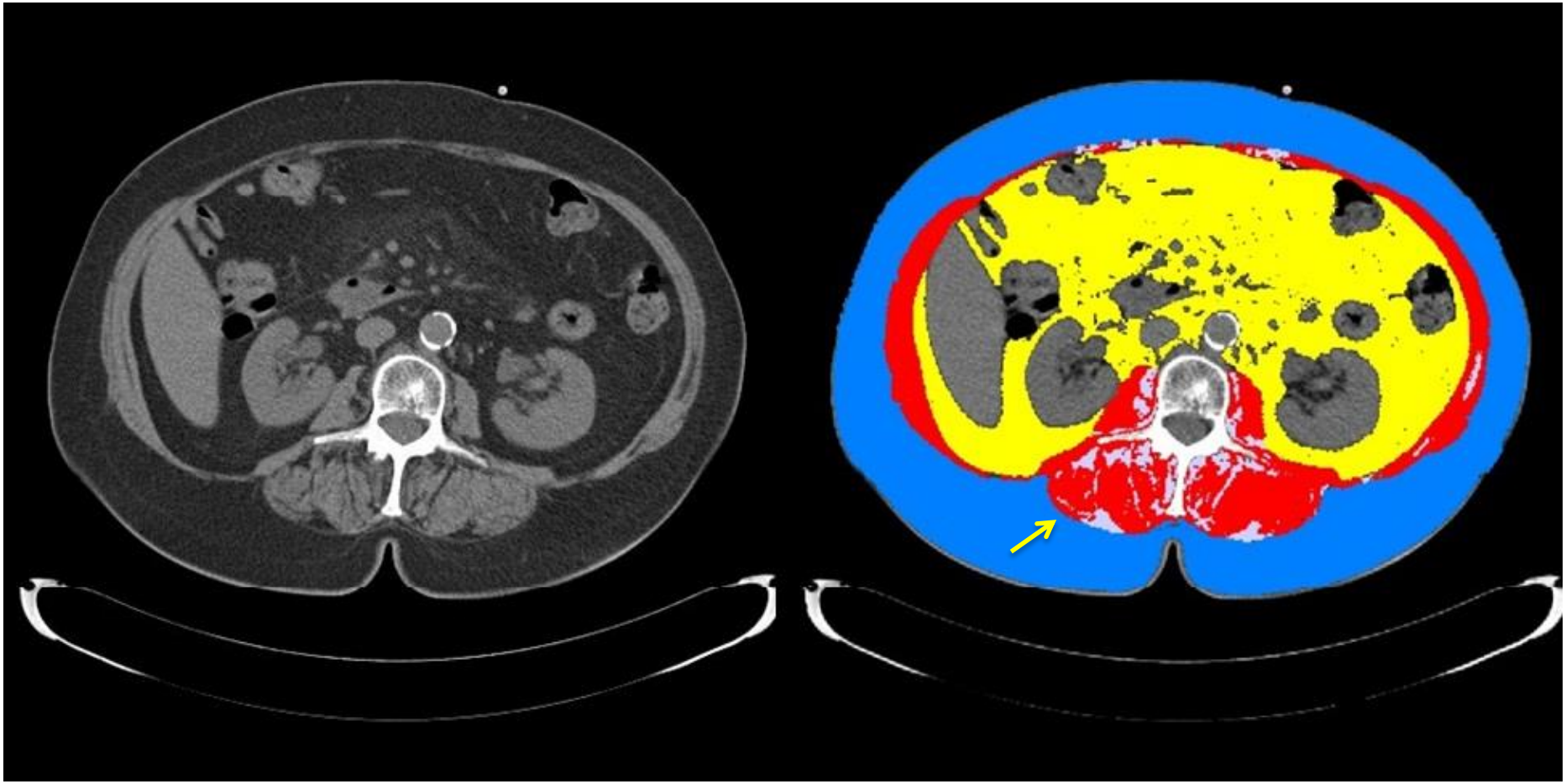

Nutrition in cancer: impact on outcome

Specific substrate in the nutrition of cancer patient

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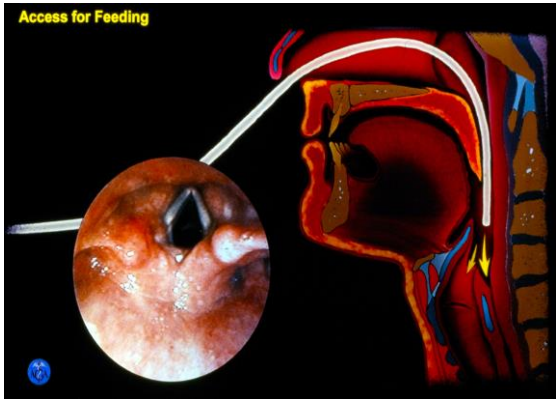
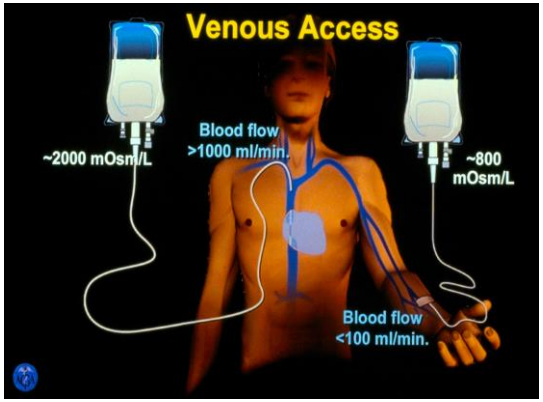
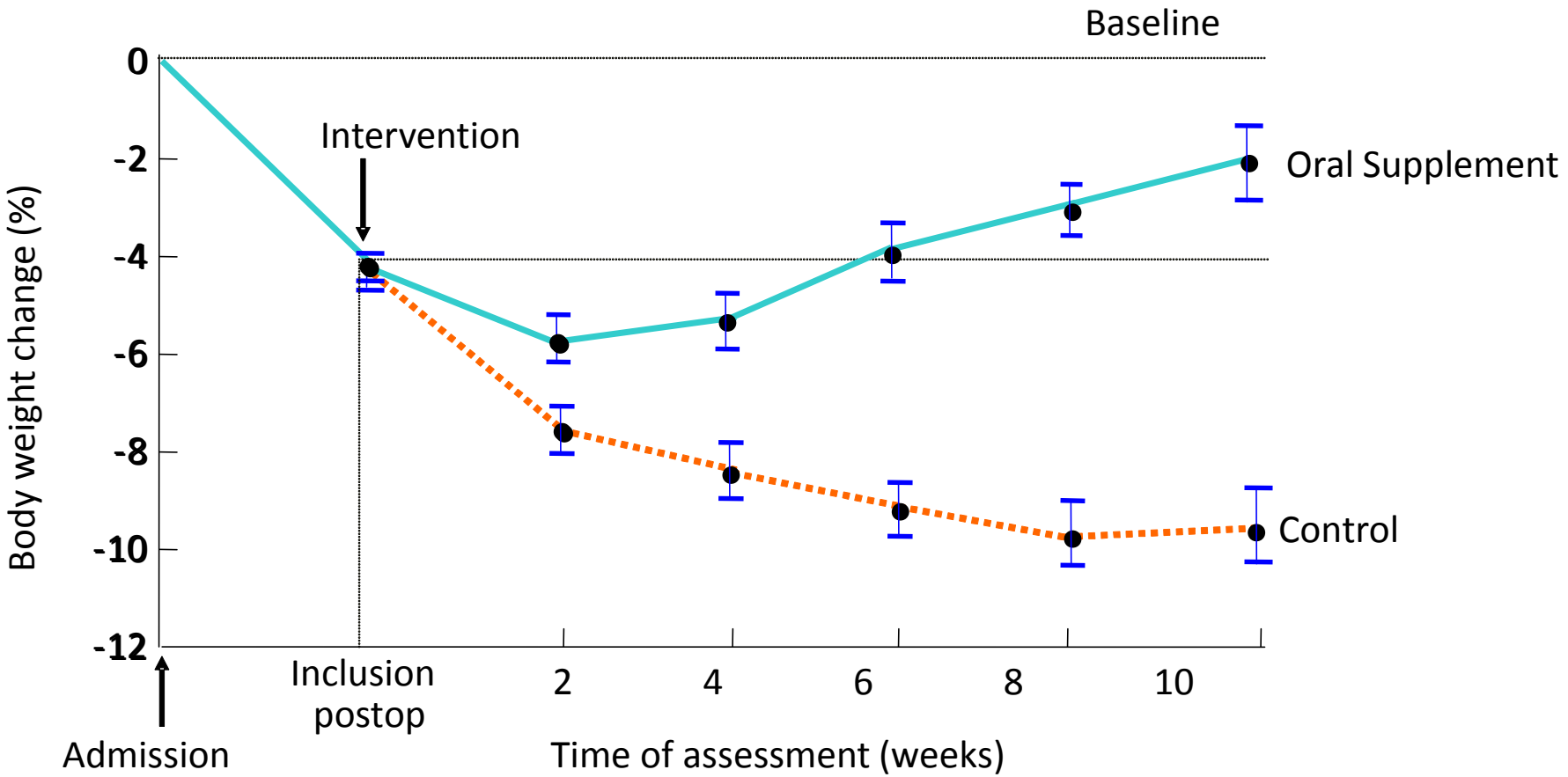
Patient's features		
• Age • Type of tumor • Staging • Curability • Multimodal therapy • Patient's willingness • Co-morbidity	Clinical situation	Nutrition support
	• At diagnosis • Weight loosing • Perioperative • Chemo/radio • Advanced cancer • Terminal	• Diet counseling • ONS • Enteral • Parenteral

Diet and nutritional intervention





Change in body weight



Beattie et al 2000, Gut 46: 813-8

Cancer cachexia

Therapeutic approaches

1. Eicosapentanoic acid (EPA) (omega 3)

2. Pharmacological agents

3. Combination therapy

4. Potential Therapeutic Targets

Is supplementation with special substrates or modulators beneficial in cancer patients?

w3 fatty acid?

COCHRANE Review: no benefit

but

- In 2 studies: reduced dosage of the administered EPA over the advised prescription
- In 3 RCTs: short-term duration

The COCHRANE review underscores the need of further RCTs addressing issue of preventing rather than treating cachexia

Dewey A et al, Cochran review 2007

Cancer cachexia

Pharmacological agents

- Megestrol acetate (orexigenic agent)

  ➥ improves weight gain and appetite but not quality of life

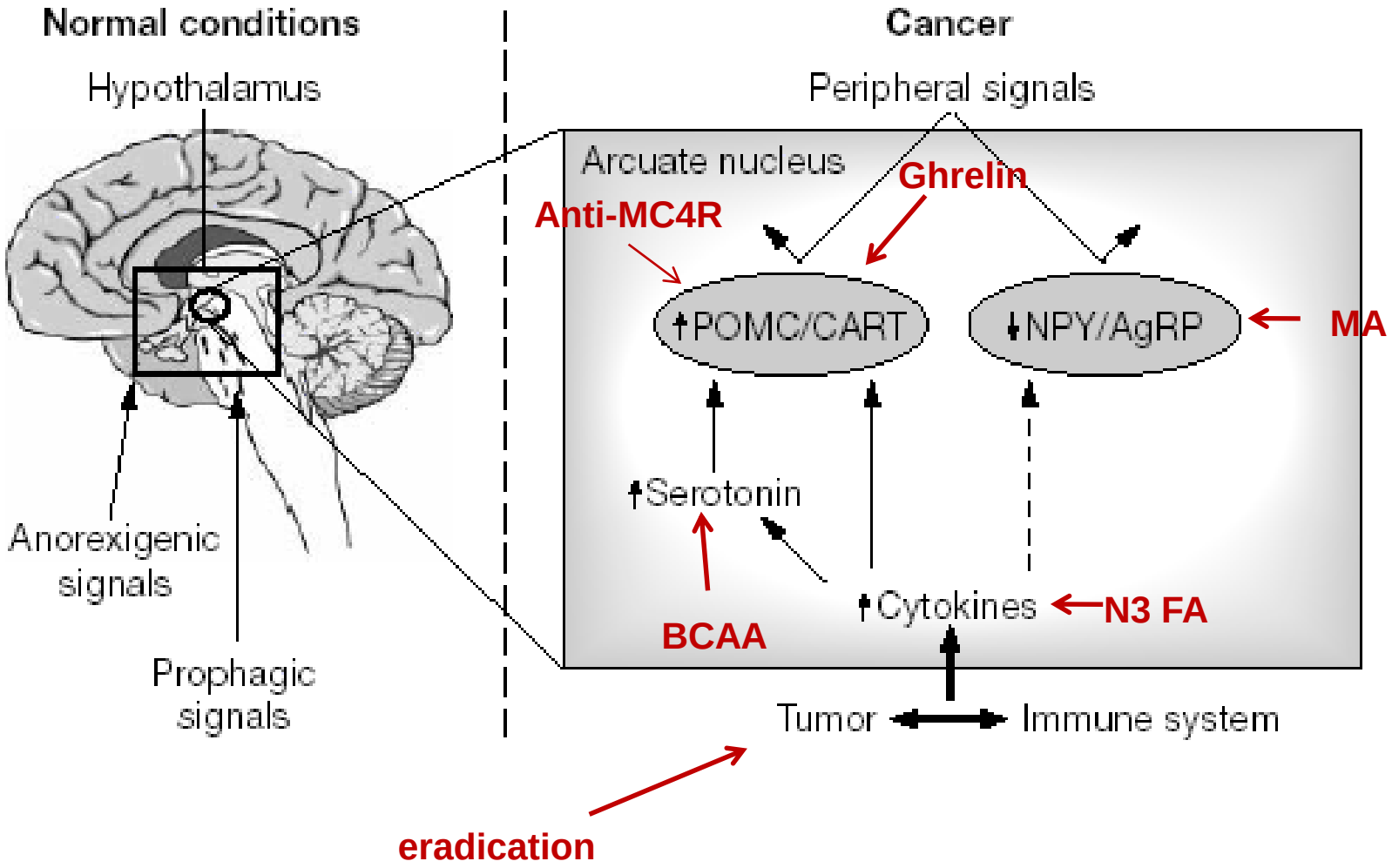
  Cochrane Review 2005

- Anti-inflammatory agents (COX inhibitors)

  Gridelli et al, Lancet Oncol 2007

- Thalidomide + effect *Gordon J et al, GUT 2005*
- Pentoxifylline Θ
- Anti-TNF Θ
- Corticosteroids side-effect
- Nandralone

Pathogenesis of cancer anorexia



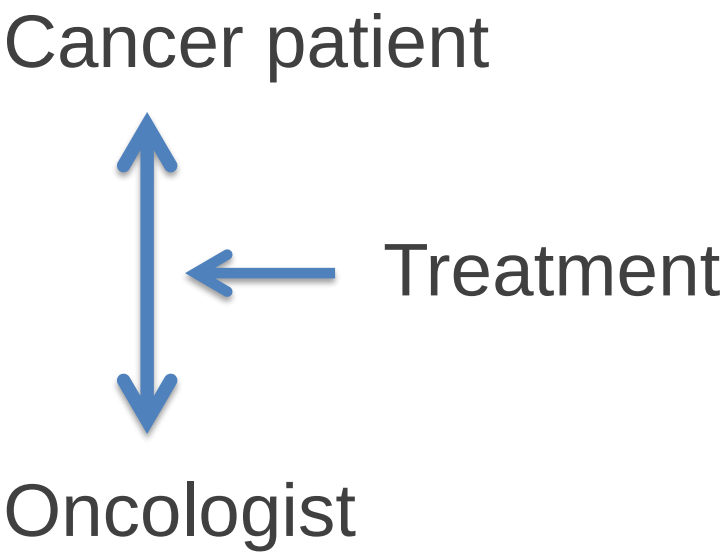
Laviano A et al. Nat Clin Pract Oncol 2:158-165, 2005

The « parallel pathway »

Oncological pathway	Metabolic nutritional pathway
Disease staging	Nutritional screening and assessment
⇩	⇩
Elaboration of therapeutic plan	Elaboration of nutritional plan
⇩	⇩
First line therapy	First level nutritional intervention
⇩	⇩
Follow-up and re-evaluations	Follow-up and re-evaluations
⇩	⇩
Second line therapy	Upper level strategies (NE, PE)0

Muscaritoli M et al, Intern Emerg Med 2010

Initial approach



Global approach (personalized)

Pathologist

Radiologist

Pharmacist

Physiotherapist

Nutritionnist / Dietetician

Oncologic patients

Multimodal therapy

Surgeon

Internist

Nurses

Psychologist

General practitionner

« Integrate nutrition in global care for improving patient's outcome »