癌症病患之營養照護

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ESPEN Guideline

2021年ESPEN的癌症臨床營養照護指引

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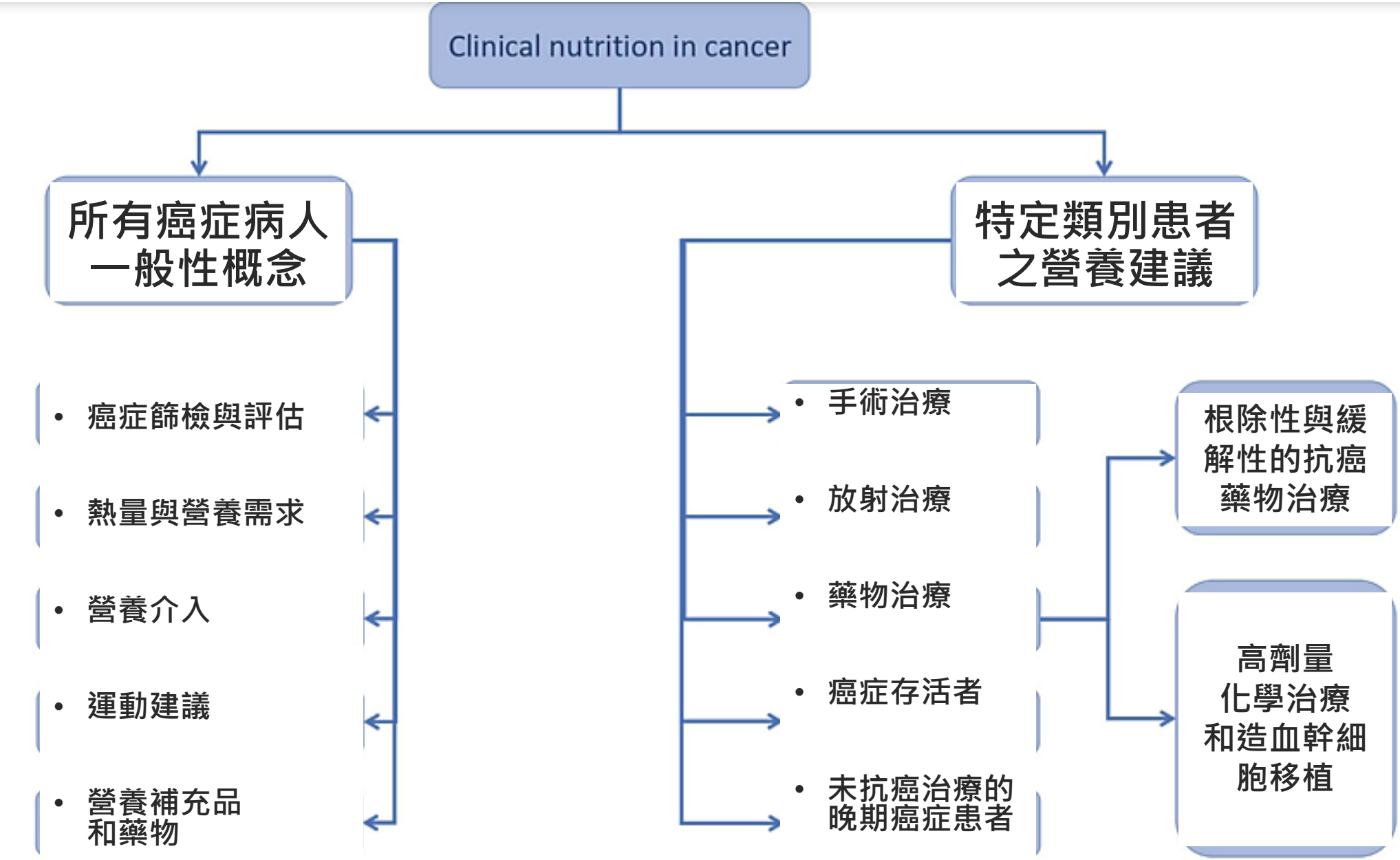
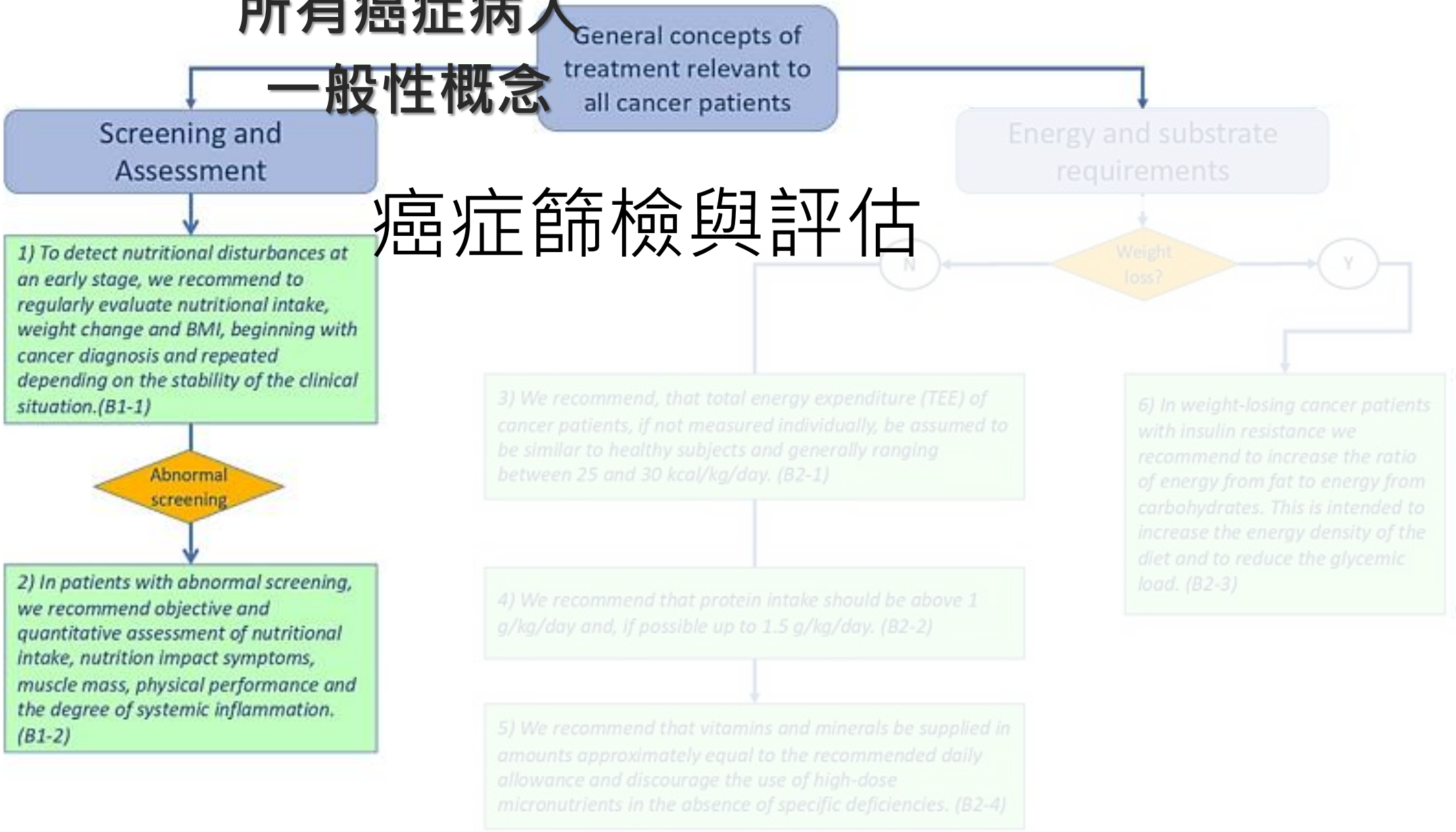


Fig. 1. Structure of the ESPEN practical guideline: "Clinical nutrition in cancer".

所有癌症病人
一般性概念



癌症篩檢與評估

Fig. 2. General concepts of treatment relevant to all cancer patients: screening and assessment; energy and substrate requirements.

癌症篩檢與評估

- 為了及早發現個案的營養問題，建議從個案確診為癌症開始，即**定期篩檢**個案的**營養攝取、體重變化和 BMI** 狀況，並根據臨床情況而進行重複性篩檢。(Recommendation B1-1; strength of recommendation strong e level of evidence very low e strong consensus)

- 對於**篩檢異常的個案**，建議針對個案的營養攝取、影響營養狀況的症狀、肌肉量、身體機能和全身發炎程度進行**評估**。(Recommendation B1-2; strength of recommendation strong e level of evidence very low e consensus)
  - 會影響個案營養狀況的症狀，如：厭食、不願進食、噁 心、便秘、口腔潰瘍、疼痛和嘔吐等症狀會影響到個案進食與營養攝取量，進而影響個案營養狀況

癌症患者的營養不良

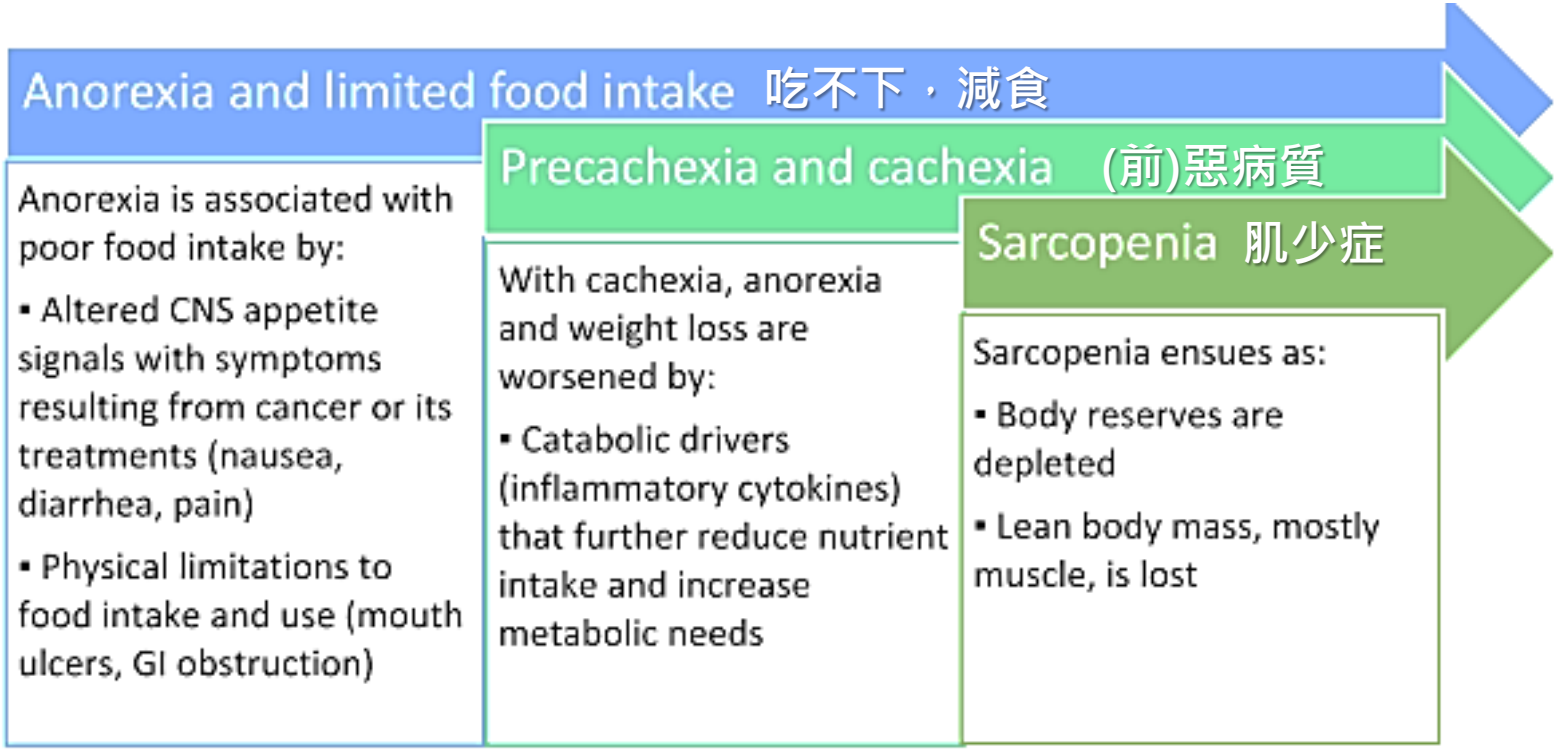
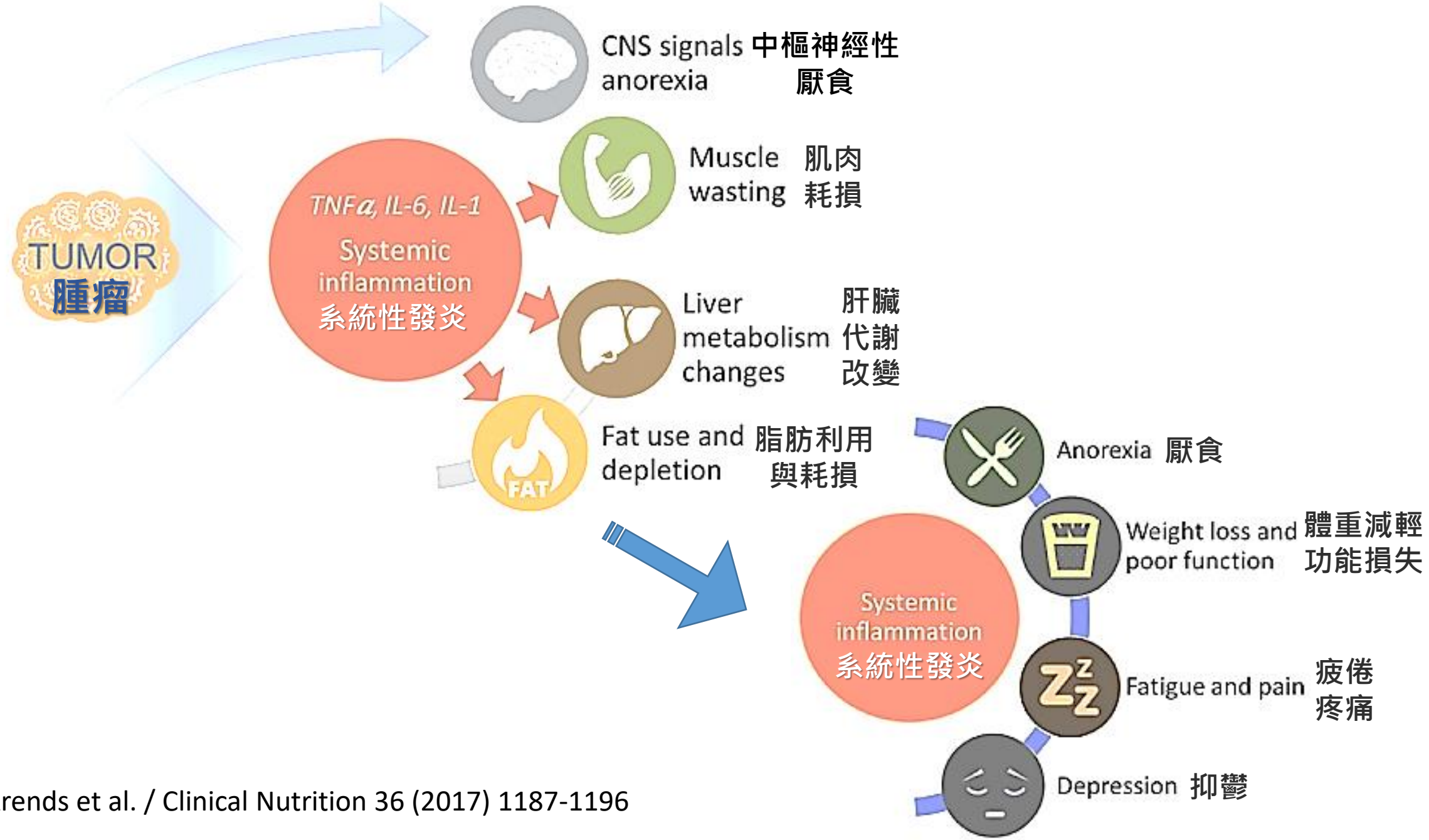


Fig. 1. Malnutrition in patients with cancer: anorexia, cachexia, and sarcopenia. Anorexia, with poor food intake and consequent weight loss, commonly occurs in disease-related malnutrition, especially cancer. These harmful changes are driven by proinflammatory cytokines and tumor-derived factors. The associated conditions of cachexia and sarcopenia may also be present or may develop as cancer advances—cachexia due to inflammation, and sarcopenia due to fatigue and low physical activity and to other causes of declining muscle mass and function. Abbreviations: Central nervous system, CNS; gastrointestinal, GI.

J. Arends et al. / Clinical Nutrition 36 (2017) 1187-1196



J. Arends et al. / Clinical Nutrition 36 (2017) 1187-1196

Malignant ovary cancer peritoneal carcinomatosis with ileus

營養篩檢　得分總分:4

身高(cm):151　　體重(Kg):41.3　BMI:18.11

A.非計劃性的減重，但最近六個月內體重明顯減輕?

*症狀如:穿衣服褲頭、領口變鬆很多;臉頰、太陽穴明顯消瘦,或一個月體重流失>5%;三個月體重流失>7.5%;六個月體重流失>10%(符合其中之一)

□無(0)

■有(4)

□不知道或不確定(2)

B.過去連續7天，進食量少於平日的一半?

■無(0)

□有(2)

C.年齡≧70歲

□是(1)

Table 1
Reports of malnutrition prevalence in hospitalized patients with cancer.

Study, country	Cancer type	Malnutrition prevalence
Attar et al., 2016 [6] France	Upper gastrointestinal	52% of patients on chemotherapy
Planas et al., 2016 [5] Spain	Multiple types	34% at hospital admission, 36% at discharge
Fukuda et al., 2015 [20] Japan	Gastric	
Maasberg et al., 2015 [21] Germany	Neuroendocrine	
Silva et al., 2015 [17] Brazil	Multiple types	
Hebuterne et al., 2014 [4] France	Multiple types	
Aaldriks et al., 2013 [19] Netherlands	Advanced colorectal	
Freijer et al., 2013 [18] Netherlands	Multiple types	
Pressoir et al., 2010 [1] France	Multiple types	
Wie et al., 2010 Korea [2]	Multiple	

Table 2
Health and financial impacts of malnutrition in patients with cancer reported in selected publications.

Study, country	Cancer type	Negative impacts of malnutrition
Planas et al., 2016 [5] Spain	Multiple types	Significantly **longer LOS** (>3 days more) and **higher costs of care** (+€2000) for patients with malnutrition risk
Fukuda et al., 2015 [20] Japan	Gastric	Significantly **higher risk of surgical site infections** in malnourished compared to well-nourished patients (36% vs 14%, $P < 0.0001$)
Gellrich et al., 2015 [25] Switzerland	Oral	Malnourished patients had significantly **lower scores on QoL scales** related to physical function
Maasberg et al., 2015 [21] Germany	Neuroendocrine	Significantly **longer LOS** and **higher risk for mortality** in malnourished patients
Martin et al., 2015 [22] Canada	Multiple types	Weight-stable patients with BMI ≥25.0 kg/m^2 had the longest survival while **high % weight loss values associated with lowered categories of BMI were related to shortest survival**
Aaldriks et al., 2013 [19] Netherlands	Advanced colorectal	Malnutrition predicted **lower tolerance to chemotherapy** and was associated with greater **risk of mortality**
Freijer et al., 2013 [18] Netherlands	Multiple types	Disease-related malnutrition accounted for an excess €2 billion healthcare spending in a year; 1 of every €7 (about €300 million total) could be attributed to **excess healthcare spending on patients with cancer**
Pressoir et al., 2010 [1] France	Multiple types	Compared with adequately nourished patients, malnourished patients required **more antibiotic treatments** (36% vs 23%, $P < 0.0001$) and had significantly **longer LOS** Severely malnourished patients were at **4-fold higher risk of 2-month mortality** than well-nourished patients

Abbreviations: length of stay, LOS; body mass index, BMI; quality of life, QoL.

J. Arends et al. / Clinical Nutrition 36 (2017) 1187-1196

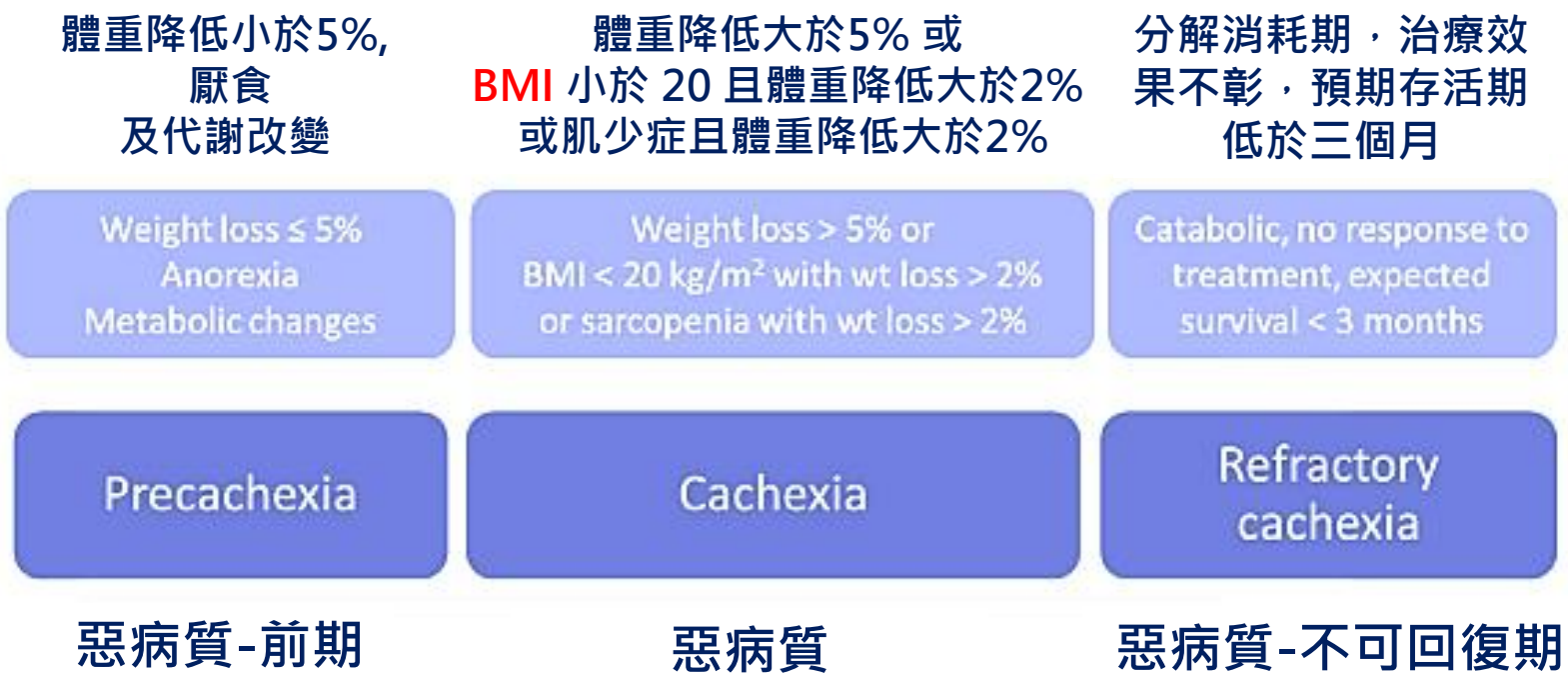


Fig. 4. Medical nutrition care depends on a patient's nutritional and metabolic needs, which are related to cancer stage and nutritional status. Some nutritional strategies can be used across multiple cancer stages. In general, worsening cachexia (with intensifying inflammation) necessitates adjustments in nutritional care. Abbreviations: oral nutritional supplements, ONS; weight, wt.

J. Arends et al. / Clinical Nutrition 36 (2017) 1187-1196

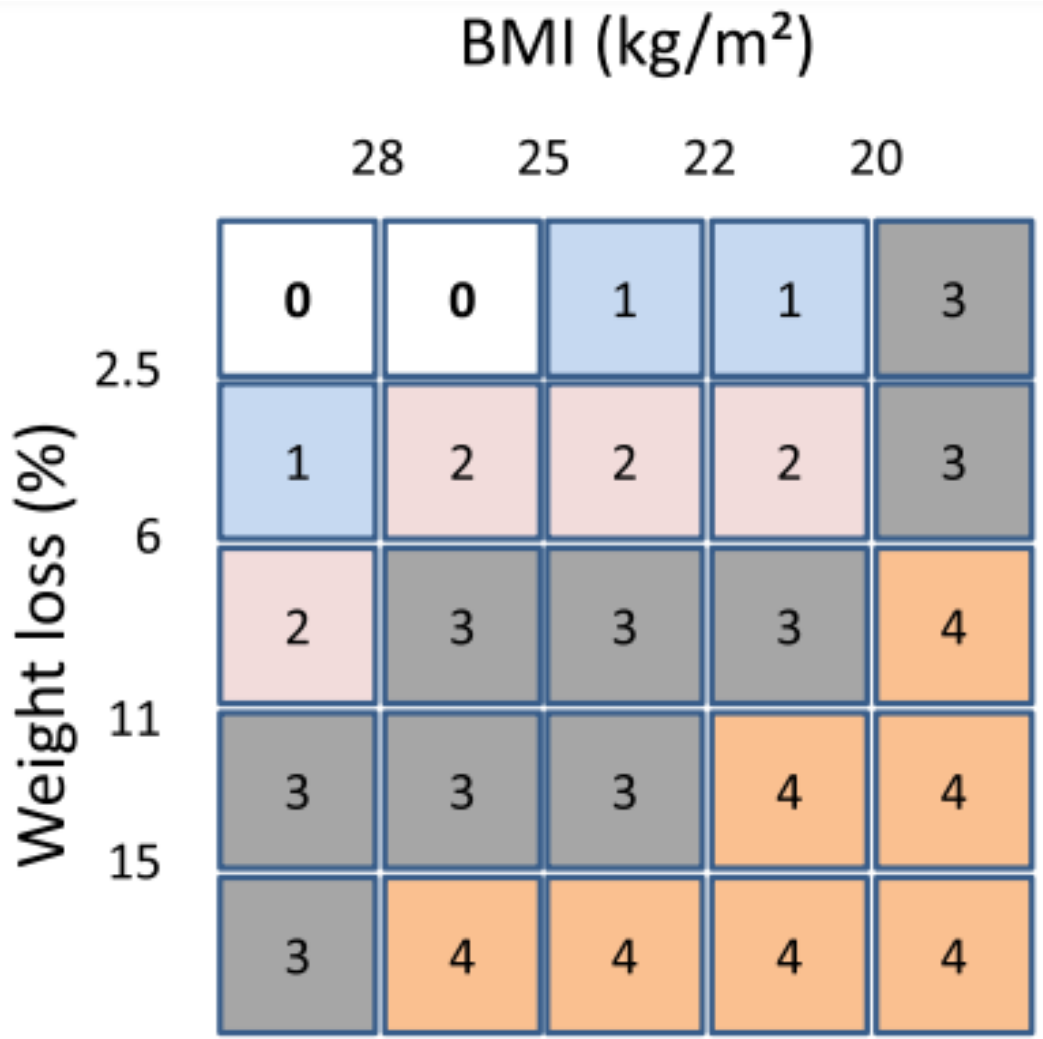


Fig. 2. Grading scheme (grades 0–4) to predict overall survival in patients with advanced cancer. The grading scheme is based on groupings of BMI and weight loss showing distinct median survival (0: best, 4: worst prognosis). ($p < 0.001$; adjusted for age, sex, disease site, stage and performance status). (Adapted from 25).

J. Arends et al. / Clinical Nutrition 36 (2017) 11-48

所有癌症病人
一般性概念

熱量與營養需求

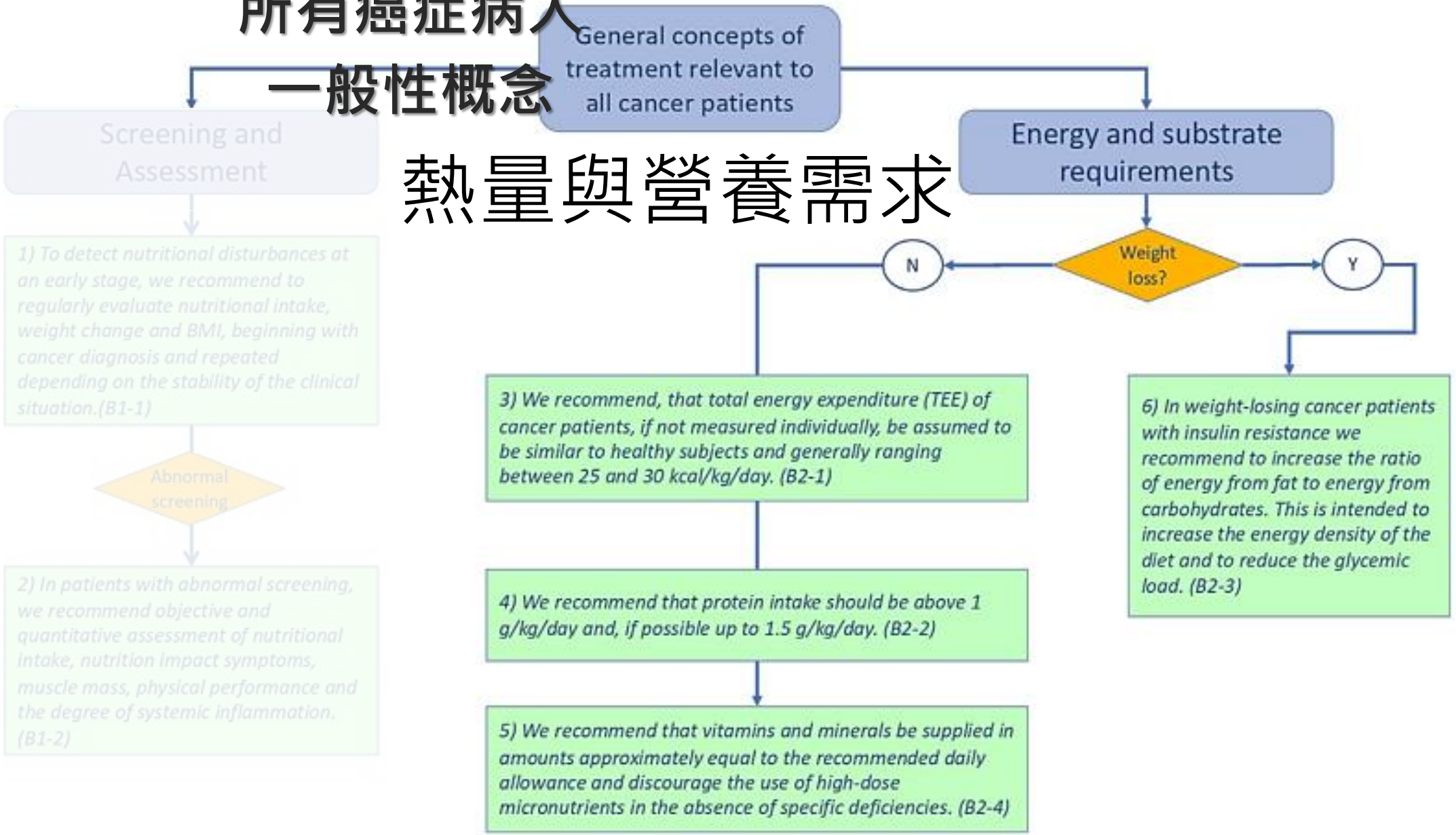


Fig. 2. General concepts of treatment relevant to all cancer patients: screening and assessment; energy and substrate requirements.

熱量與營養需求

- 如果未能測量個案的**總能量消耗** (total energy expenditure, TEE)，則建議假定癌症患者的總 能量消耗與健康受試者相似，其能量消耗通常為每日 **25 至 30 kcal/kg**。(Recommendation B2- 1; strength of recommendation strong e Level of evidence low e consensus)
- 建議**蛋白質**攝取量應**高於 1 g/kg/day**，如果情況允許，攝取量應**達到 1.5 g/kg/day**。 (Recommendation B2-2; strength of recommendation strong e Level of evidence moderate e strong consensus)

熱量與營養需求

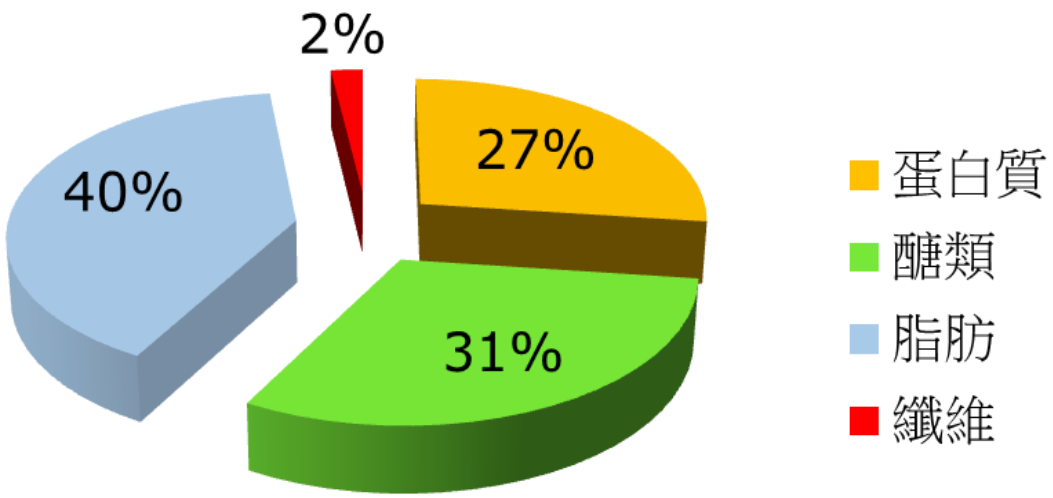
- 補充維生素和礦物質時，補充量應約與每日建議攝取量相等，且若無特定缺乏的現象，則不鼓勵使用高劑量的微量營養素。(Recommendation B2-4; strength of recommendation strong e Level of evidence low e strong consensus)
- 針對有**胰島素阻抗的癌症患者**，**若有體重流失的問題，建議提高飲食中「脂肪：碳水化合物」所提供的熱量比例，以增加飲食的熱量密度，降低血糖負荷。**(Recommendation B2-3; strength of recommendation strong e Level of evidence low e consensus)

均衡飲食

低醣飲食

生酮飲食

XX 癌症專用營養配方 熱量分佈設計



容量		200ml
熱量 (大卡)		300 (1,5 Kcal/ ml)
蛋白質	% of Energy	27 %
	含量(公克)	20 GM
碳水化合物 (醣類)	% of Energy	31 %
	含量 (公克)	23.2 GM
脂肪	% of Energy	40 %
	含量(公克)	13.4 GM (MCT: 24%)
	EPA (公克)	EPA: 1g / DHA: 0.42g

所有癌症病人

一般性概念

營養介入

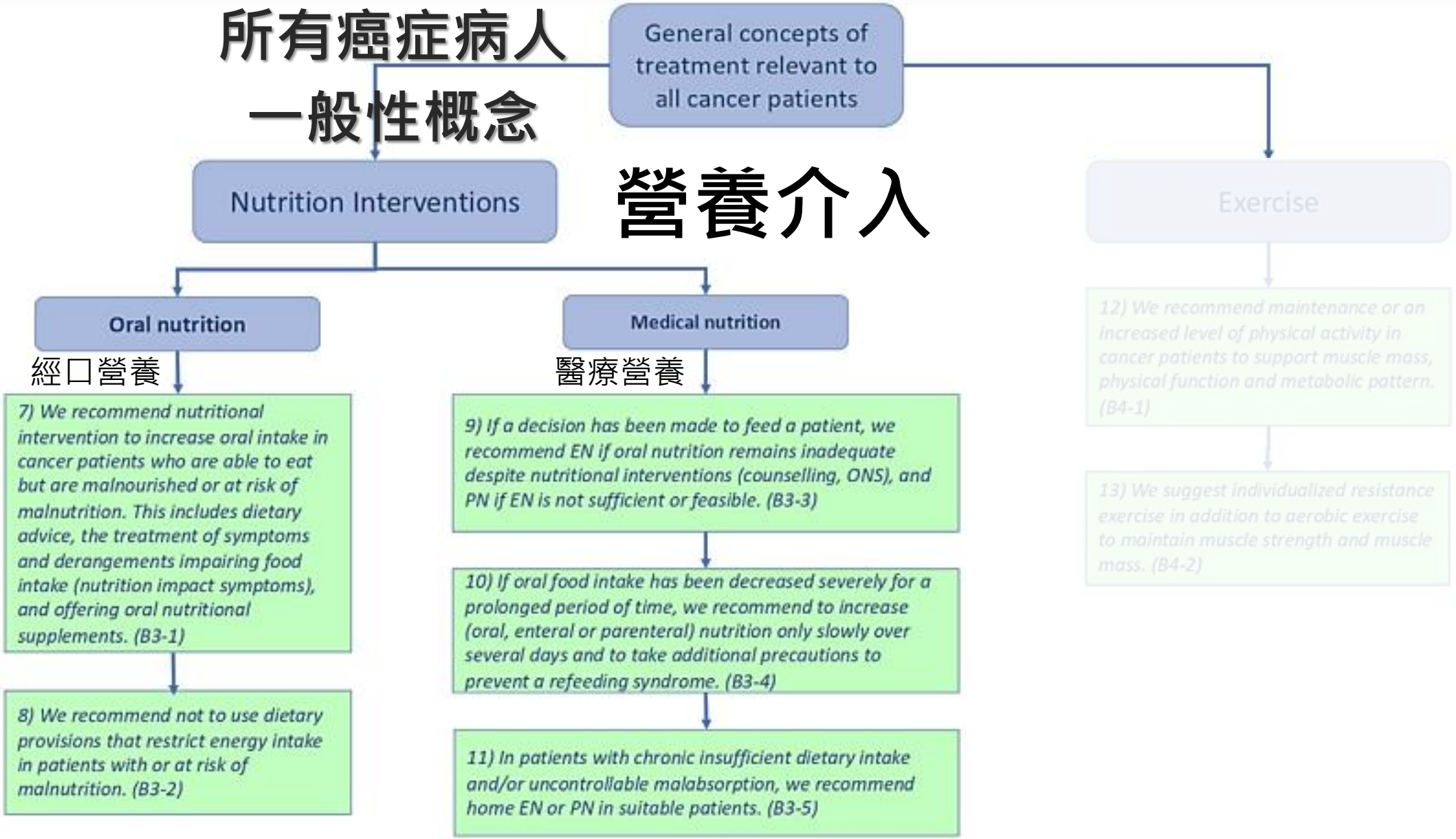


Fig. 3. General concepts of treatment relevant to all cancer patients: types of nutrition intervention; exercise.

營養介入

- 對於能夠由口進食但營養不良或有營養不良風險的癌症患者，建議營養介入措施應以**增加由口進食量為原則**，可採取措施包括給予飲食建議、治療會影響食物攝取的症狀或生理異常狀況 (nutrition impact symptoms)，以及提供**口服營養補充品**。(Recommendation B3-1; strength of recommendation strong e Level of evidence moderate e consensus)

- 針對營養不良或有營養不良風險的患者，**不建議限制熱量攝取量**。(Recommendation B3-2; strength of recommendation strong e Level of evidence low e strong consensus)

病人飲食攝取不足之處置

提供

- 喜好性食物
- 調整食物供應份量、頻率及質地
- 高熱量、營養密度食物補充建議

飲食攝取不足之處置

- 變化飲食供應**口味、型式**
  - 普通飲食
  - 麵食
  - 西餐
  - 日式料理
  - 藥膳
  - 點心

病人飲食攝取不足之處置

- 改變供餐**份量、頻率(餐次)**
  - 量少多餐原則
  - 正餐減少供應份量
  - 兩餐之間補充點心
  - 6-8餐/日

病人飲食攝取不足之處置

- 改變供餐**質地**
  - 煮軟(soft diet)
  - 切碎(ground diet)
  - 切細煮爛成半流質(semi-liquid diet)
  - 絞打成流質(full-liquid diet)
  - 煮爛過濾成泥漿狀或加入食物增稠劑(puree diet)



營養介入

- 針對已經給予營養介入（如：營養諮詢、口服營養補充品）後仍**無法由口攝取足夠營養之個案**，若決定採取餵食照護，建議使用 **EN**；若無法給予 EN 或給予 EN 仍無法獲得足夠營養者， 則使用 **PN**。(Recommendation B3-3; strength of recommendation strong e Level of evidence moderate e strong consensus)
- 若個案由口進食攝取量嚴重減少的情況已持續一段時間，則建議進行營養介入（含口服、EN 或 PN）的初期幾天，營養素的給予量應**緩慢地增加**並進行額外的預防措施，以預防個案發生再餵食症候群。(Recommendation B3-4; strength of recommendation strong e Level of evidence low e consensus)
  - 為防止再餵食症候群的發生，在營養介入之前和期間，可考慮每天給予 200-300 毫克維 生素 B1 以及均衡的綜合微量營養素。應監測以下電解質並於必要時透過口服、EN 或 PN 補充鉀（需要量約為 24 mmol/kg/天）、磷（需要量約為 0.3-0.6 mmol/kg/天）和鎂（如果靜脈注射大約需要 0.2 mmol/kg/天，如果 口服大約需要 0.4 mmol/kg/天）。

營養介入

- 針對長期飲食攝取不足和/或無法控制的吸收不良之患者，若情況允許，建議患者使用 home EN 或 PN。(Recommendation B3-5; strength of recommendation strong e Level of evidence low e strong consensus)

所有癌症病人
一般性概念

運動

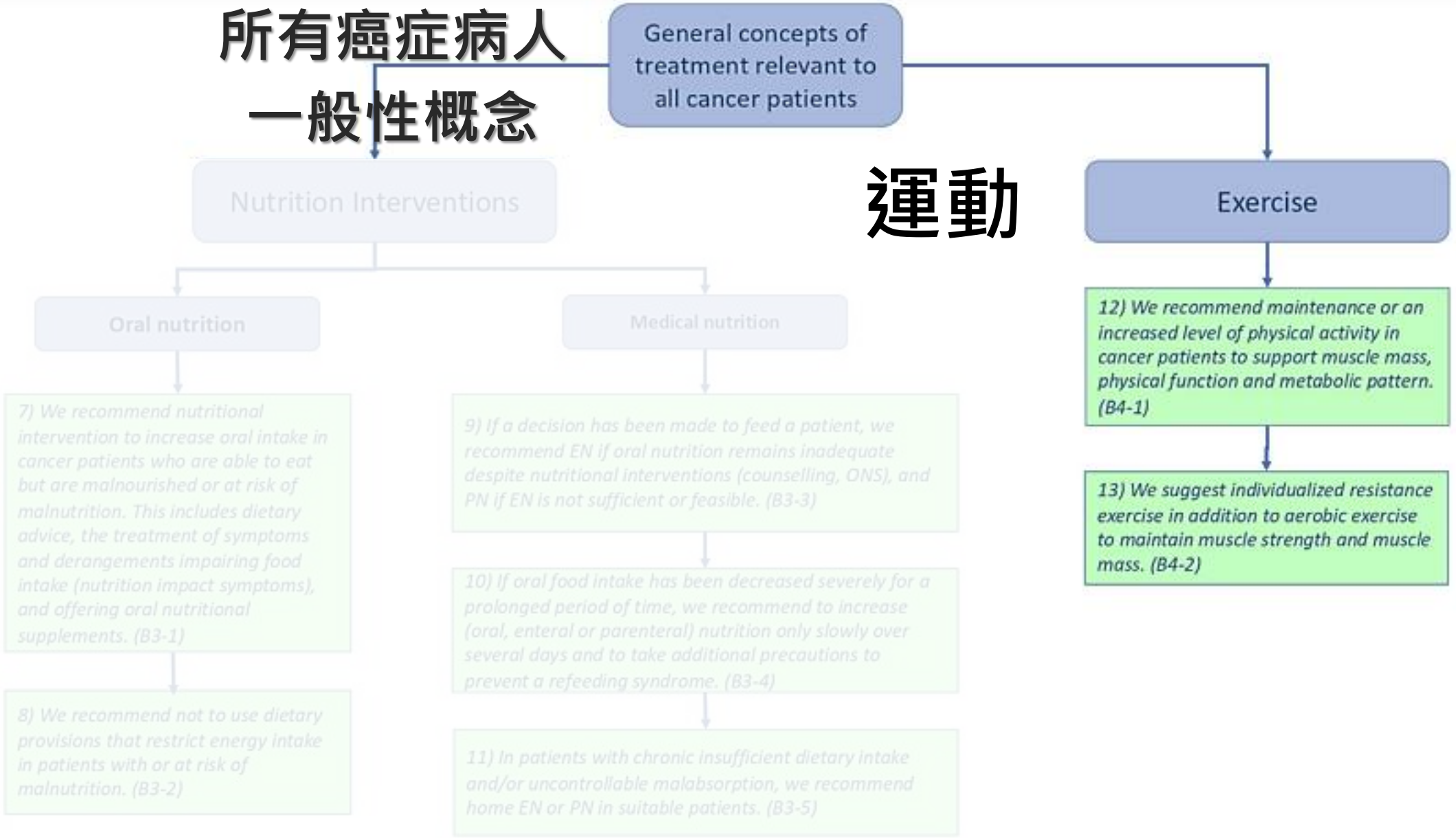


Fig. 3. General concepts of treatment relevant to all cancer patients: types of nutrition intervention; exercise.

運動

- 建議癌症患者**維持或增加身體活動量**，以維持肌肉量、生理機能和代謝狀況。 (Recommendation B4-1; strength of recommendation strong e Level of evidence high e consensus)

- 建議個案進行**有氧運動**，同時進行適合個案狀況的**阻抗運動**，以保持肌肉力量和肌肉量。 (Recommendation B4-2; strength of recommendation weak e Level of evidence low e strong consensus)

FITT	建議癌症族群的運動處方開立總結		
	有氧	阻力	柔軟度
頻率(F)	3-5天/周	2-3天/周	≧2-3天/周，每天作最好
強度(I)	中強度(40-59% VO2R或HRmax 64-75%或RPE 12-13)至高強度(60-89% VO2R或HRmax 76-95%或RPE 14-17)	從<30% 1RM開始，盡其所能的最小幅度增加強度	伸展到可以忍受的範圍
時間(T)	高強度運動: 75分/周 中強度運動: 150分/周 或是等效於兩者結合	8-12下反覆至少一組	靜態伸展10-30秒
類型(T)	持續性的，有節奏的大肌群運動(走路，腳踏車或是游泳)	機器與自由重量或使用自身重量訓練	對所有大肌群作靜態伸展或活動度訓練。處理關節或肌肉的限制區域例如類固醇/放療/手術

ACSM運動測試與運動處方指引第十版 (ACSM's Guidelines for Exercise Testing and Prescription)

營養補充品和藥物

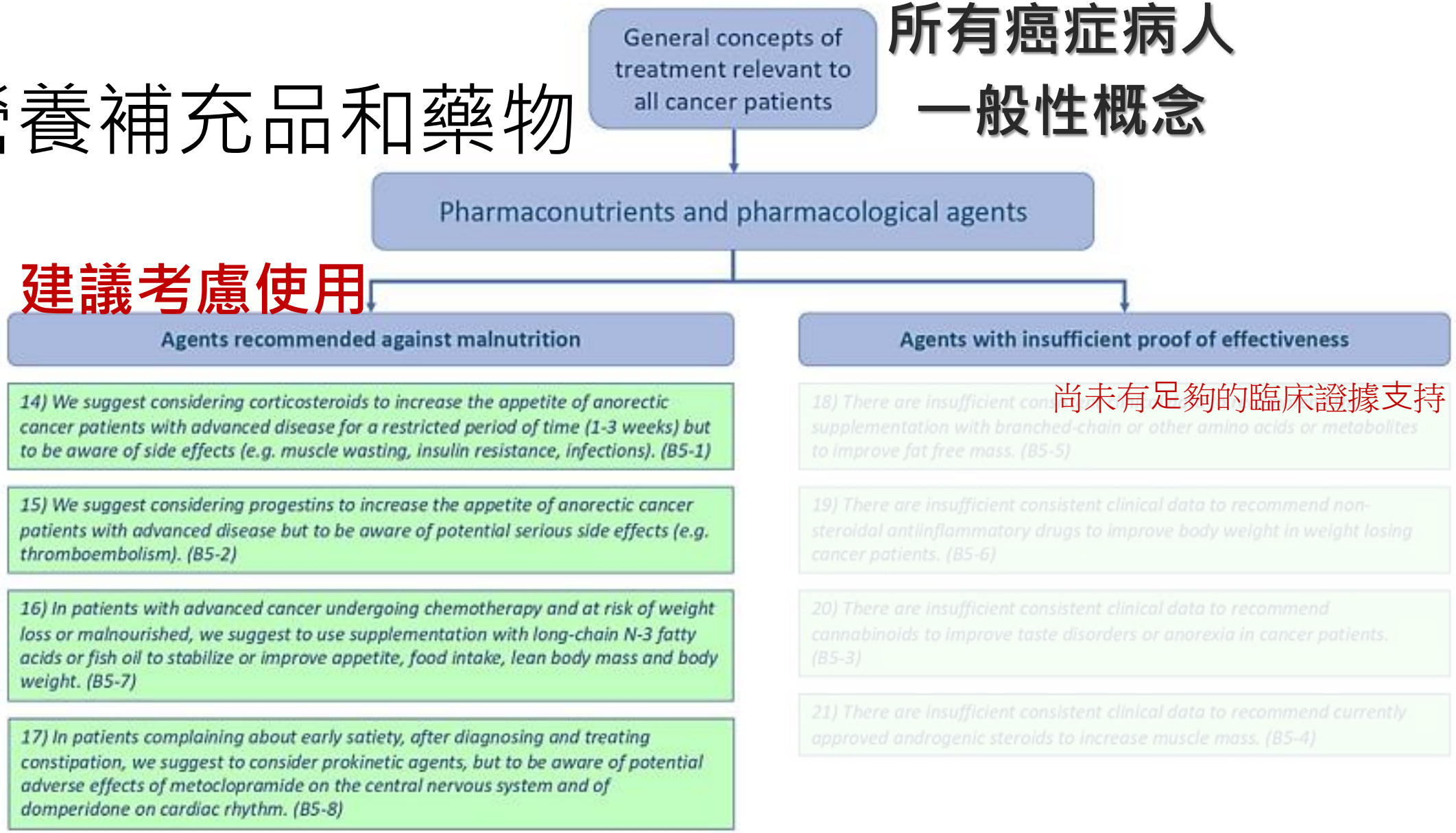


Fig. 4. General concepts of treatment relevant to all cancer patients: pharmaconutrients and pharmacological agents.

營養補充品和藥物

針對厭食的晚期疾病（advanced disease）

- 建議考慮使用一段時間（1-3 週）的皮質類固醇以提升個案的食慾，但要注意副作用，如：肌肉萎縮、胰島素阻抗或感染。 (Recommendation B5-1; strength of recommendation weak e Level of evidence high e consensus)
- 建議考慮使用 progestins 以提升個案的食慾，但要注意潛在的嚴重副作用，例如血栓栓塞。(Recommendation B5-2; strength of recommendation weak e Level of evidence high e consensus)

營養補充品和藥物

- 針對正在進行化學治療的晚期癌症（advanced cancer）患者，若有體重流失或營養不良的 風險，建議使用 **long-chain n-3 fatty acids** 或**魚油**補充品來穩定或改善食慾、食物攝取量、 瘦體組織和體重。(Recommendation B5-7; strength of recommendation weak e Level of evidence low e strong consensus)
- 針對主訴早飽（early satiety）的患者，在診斷和治療便秘後，建議考慮給予胃腸蠕動促進劑 (prokinetic agents)，但要注意 metoclopramide 對中樞神經系統和 domperidone 對心律 的潛在不良影響。(Recommendation B5-8; strength of recommendation weak e Level of evidence moderate e consensus)

ω-3 Fatty-Acid Enriched PN Product

The Mix for Life

Fish oil
provides omega-3 fatty acids EPA[a] and DHA[b]

15%

30%

Soybean oil
covers essential fatty acid requirements

Olive oil
a supply of monounsaturated fatty acids

25%

30%

Medium-chain triglycerides
source of rapidly available energy

[a] EPA: eicosapentaenoic acid
[b] DHA: docosahexaenoic acid

+ additional vitamin E
(approx. 200 mg α-tocopherol/liter) to counteract lipid peroxidation and oxidative stress[1,2]

THE MIX FOR LIFE

UNITED for clinical nutrition

脂肪靜脈輸注液
lipid 20% Emulsion for Infusion

衛署藥輸字第024519號
本藥限由醫師使用

【劑型】
每1000毫升輸注液中含有：

精煉大豆油	60.0公克
中鏈三酸甘油酯	60.0公克
精煉橄欖油	50.0公克
富含omega-3脂肪酸的魚油	30.0公克

總熱量	8.4百萬焦耳／公升（＝2000仟卡／公升）
酸鹼值	約8
滲透壓	約380 mos莫耳／公斤水

液態魚油


bepo
biopharm sl
para Niños y Adultos
TOP
Petit pur3
740 mg* EPA
+ 460 mg* DHA
por 5 ml.
Omega-3 Líquido
200 ml

best choice omega-3
Petit pur3

營養補充品和藥物

尚未有足夠的臨床證據支持

- 「補充支鏈胺基酸、其他胺基酸或代謝物能改善非脂肪組織(fat free mass)」。(Recommendation B5-5; strength of recommendation none e Level of evidence low e strong consensus)
- 「non-steroidal anti-inflammatory drugs 能改善體重流失的癌症 患者之體重」。(Recommendation B5-6; strength of recommendation none e Level of evidence low e strong consensus)
- 「使用 cannabinoids 能改善癌症患者的味覺障礙或厭食症」。(Recommendation B5-3; strength of recommendation none e Level of evidence low e consensus)
- 「使用目前批准的 androgenic steroids 能增加肌肉質量」。(Recommendation B5-4; strength of recommendation none e Level of evidence low e consensus)

特定類別的患者的介入措施

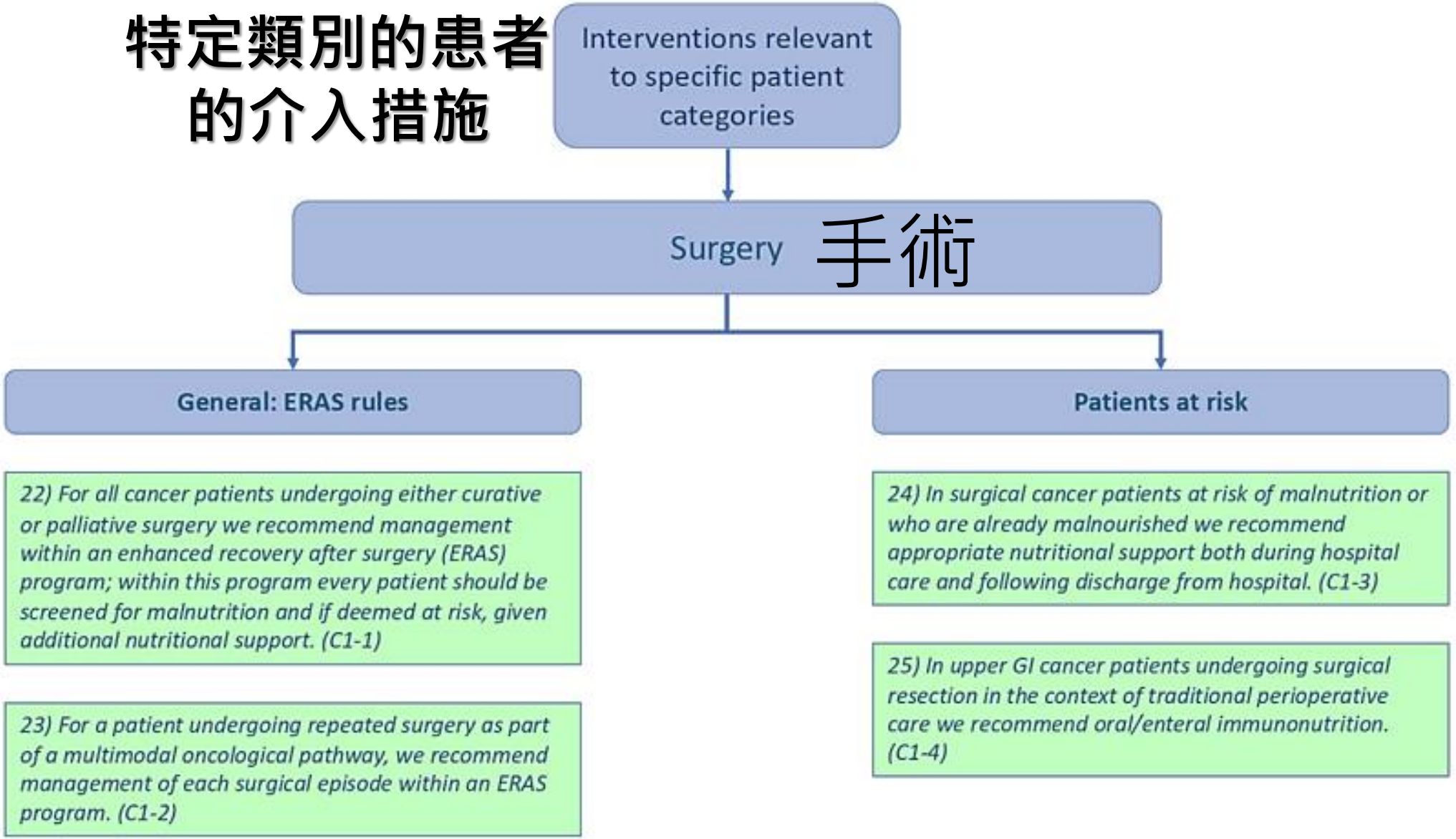


Fig. 5. Interventions relevant to specific patient categories: surgery.

手術

- 對於所有接受根除性(curative)與緩解性(palliative)手術的癌症患者，建議進行**術後加速康復療程(Enhanced Recovery After Surgery, ERAS)管理**；在該計劃中，每位患者都應接受營養不良的篩檢，如果認為有營養不良的風險，則應給予個案額外的營養支持。(Recommendation C1-1; strength of recommendation strong e Level of evidence high e consensus)
  - 術後加速康復(Enhanced Recovery After Surgery, ERAS) 是整合手術病人照護流程，讓病 人從門診診斷、等待住院、術前準備、接受手術、術後恢復，甚至是出院追蹤的各個流程中，保持高品質且不中 斷的照護水準，減少術後併發症發生，醫療資源有效利用。
- 採用多重治療模式而需接受多次手術治療的癌症患者，建議將每次的手術皆**列入 ERAS 計劃**中，以進行管理。(Recommendation C1-2; strength of recommendation strong e Level of evidence low e consensus)
  - 接受多重治療模式的癌症患者，有較高的風險會出現營養狀況逐漸變差的問題。為了避 免營養狀況逐步變差，因此必須盡量減緩多次手術所帶來的營養/代謝變化問題，且 ERAS 計畫中也應針對每次的 手術進行管理。

手術

- 針對接受手術的癌症患者，若有營養不良風險或已經營養不良，建議於住院期間和出院後都提供適當的營養支持。(Recommendation C1-3; strength of recommendation strong e Level of evidence moderate e consensus)

- 針對在傳統圍術期照護（perioperative care）中**接受手術切除的上消化道癌症患者中，建議給予口服/腸道 免疫調節促進（arginine, n-3 fatty acids, nucleotides）**。(Recommendation C1-4; strength of recommendation strong e Level of evidence high e strong consensus)

特定類別的患者的介入措施

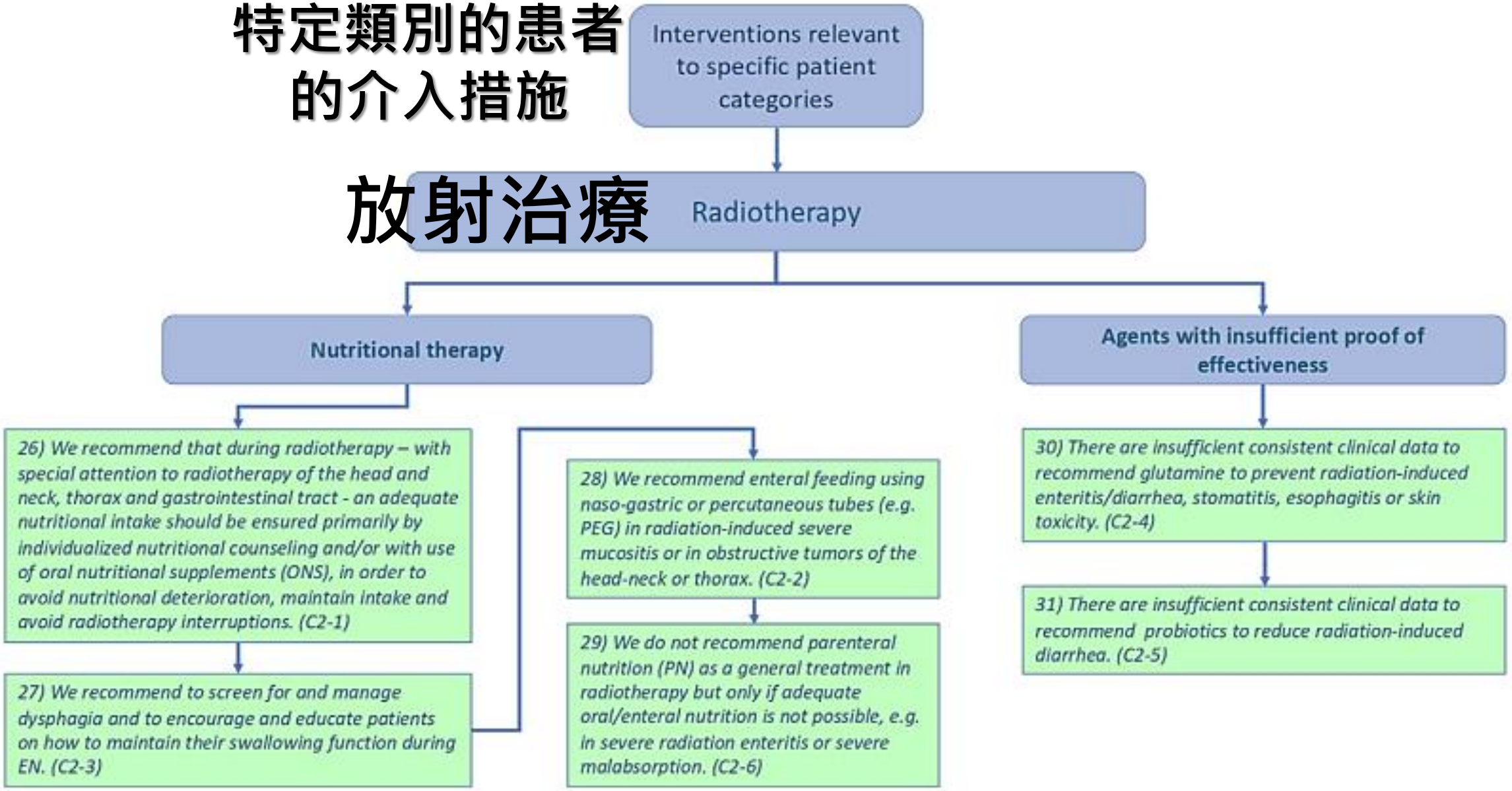


Fig. 6. Interventions relevant to patients undergoing radiotherapy.

放射治療

- 針對接受頭頸部、胸腔和胃腸道放射性治療的患者，建議於治療期間應特別注意個案之營養狀況；可以透過**個人化的營養諮詢**和/或**使用口服營養補充品**來確保攝取足夠量的營養，以避免營 養惡化、中斷放射治療。(Recommendation C2-1; strength of recommendation strong e Level of evidence moderate e strong consensus)
- 建議針對個案進行篩檢，若有**吞嚥困難者應進行管理**，並鼓勵和教育患者於使用 EN期間該如何維持吞嚥功能。(Recommendation C2-3; strength of recommendation strong e Level of evidence low e strong consensus)
- 針對接受放射治療而誘發嚴重粘膜炎，或有阻塞性腫瘤的頭頸部或胸腔腫瘤患者，建議使用鼻 胃管或造口（如：PEG）給予 EN。(Recommendation C2-2; strength of recommendation strong e Level of evidence low e strong consensus)

放射治療

- 針對放射治療的個案，除非個案有由口攝食不足或腸道營養不足的狀況（如：嚴重腸炎或嚴重 吸收困難），否則不建議將 PN 作為常規治療。(Recommendation C2-6; strength of recommendation strong e Level of evidence moderate e consensus)
- **尚未有足夠的臨床證據支持**
  - 「使用 **glutamine** 能預防放射治療引起的腸炎、腹瀉、口腔炎、食 道炎或皮膚毒性」。(Recommendation C2-4; strength of recommendation none e Level of evidence low e strong consensus)
  - 「使用**益生菌** 能減緩放射治療引起的腹瀉」。(Recommendation C2-5; strength of recommendation none-Level of evidence low e strong consensus)

特定類別的患者的介入措施

抗癌藥物治療

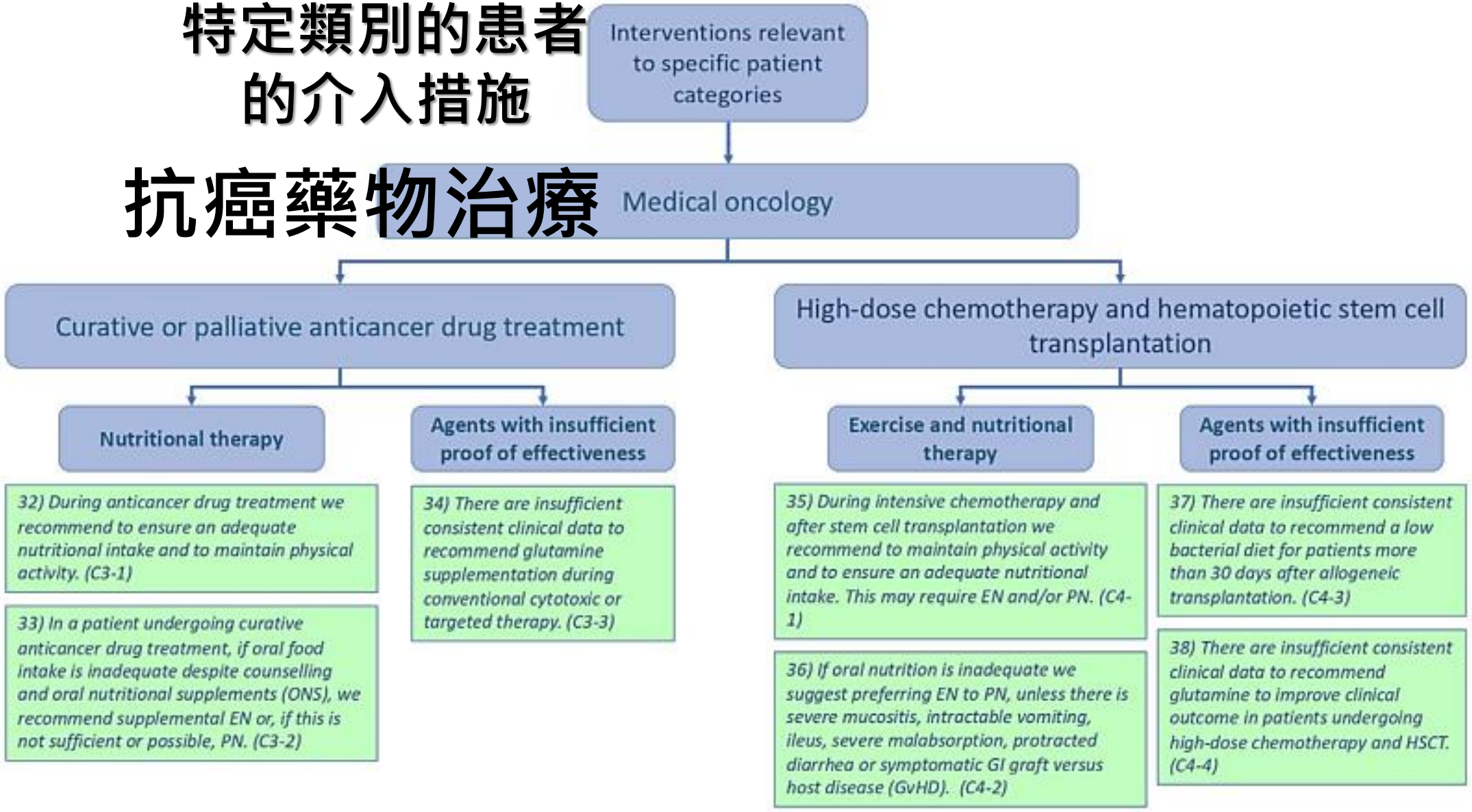


Fig. 7. Interventions relevant to medical oncology patients.

根除性與緩解性的抗癌藥物治療

- 使用抗癌藥物治療期間，建議需確保攝取足夠的營養並保持身體活動量。(Recommendation C3- 1; strength of recommendation strong e Level of evidence very low e strong consensus)
- 針對正在接受根除性抗癌藥物治療的患者，如果介入**營養諮詢和口服營養品**後，仍有攝取量不 足的狀況，建議補充 **EN**；若無法給予 EN 或給予 EN 仍無法獲得足夠營養者，則使用 **PN**。 (Recommendation C3-2; strength of recommendation strong e Level of evidence very low e consensus)
- **尚未有足夠的臨床證據支持**「於常規細胞毒藥或標靶治療（conventional cytotoxic or targeted therapy）期間應補充 glutamine」。(Recommendation C3-3; strength of recommendation none e Level of evidence low e strong consensus)

高劑量化學治療和造血幹細胞移植

- 於強化化療期間和 HSCT 後，建議**保持身體活動並確保攝取足夠的營養**；這些個案可能會需要 EN 和/或 PN。(Recommendation C4-1; strength of recommendation strong e Level of evidence very low e strong consensus)
- 若個案有口服營養不足的狀況，除非有嚴重的粘膜炎、難治性嘔吐、腸阻塞、嚴重吸收不良、 長期性腹瀉或有移植物對抗宿主病的腸道症狀，否則建議**首選 EN 而非 PN**。(Recommendation C4-2; strength of recommendation weak e Level of evidence low e strong consensus)

高劑量化學治療和造血幹細胞移植

尚未有足夠的臨床證據建議

- 「異體移植（allogeneic transplantation）後的患者應使用超過 30 天以上的低細菌飲食」。(Recommendation C4-3; strength of recommendation none e Level of evidence low e strong consensus)
- 「使用 glutamine 來改善正在接受高劑量化學治療和 HSCT 患者的 臨床結果」。(Recommendation C4-4; strength of recommendation none e Level of evidence low e strong consensus)

特定類別的患者的介入措施

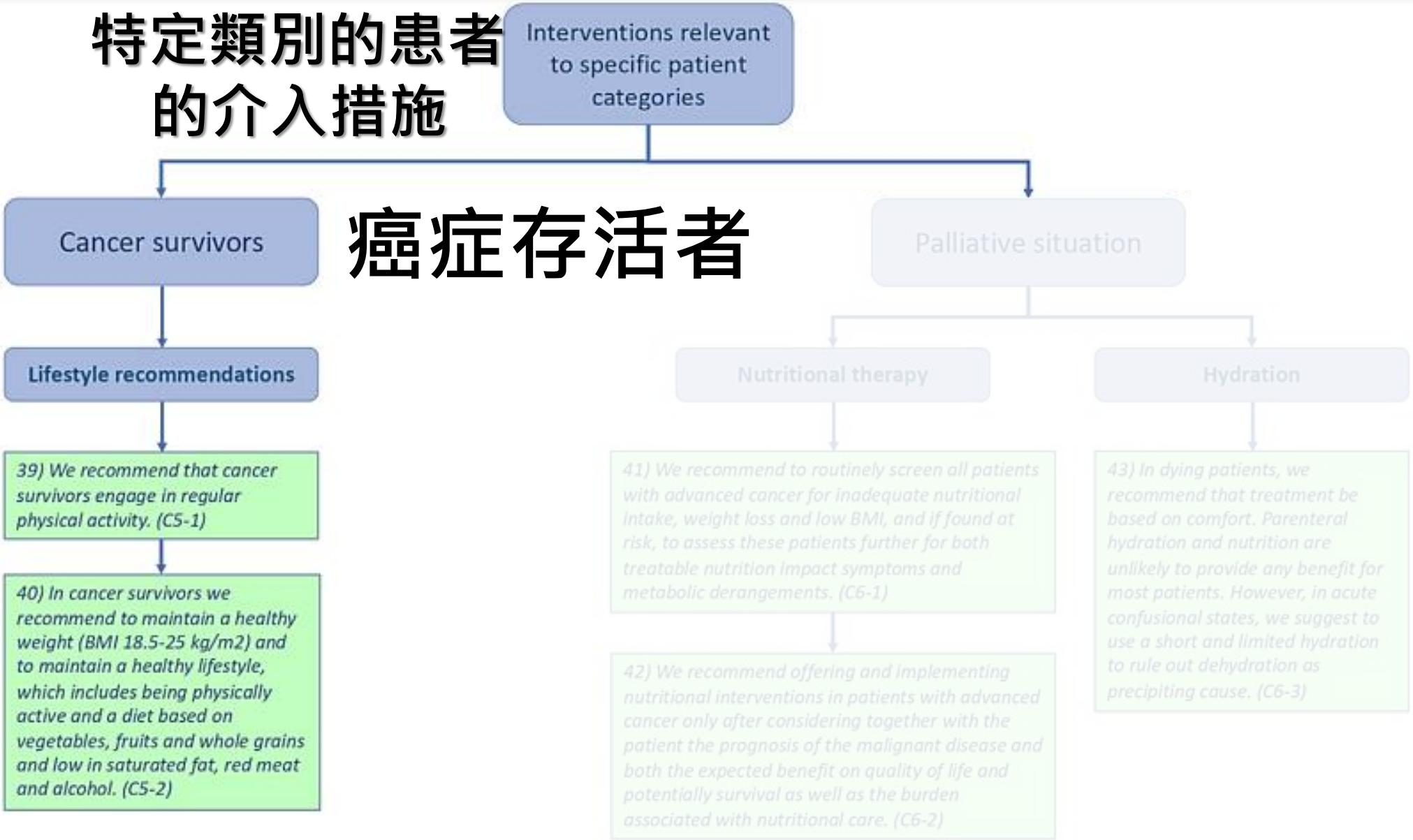
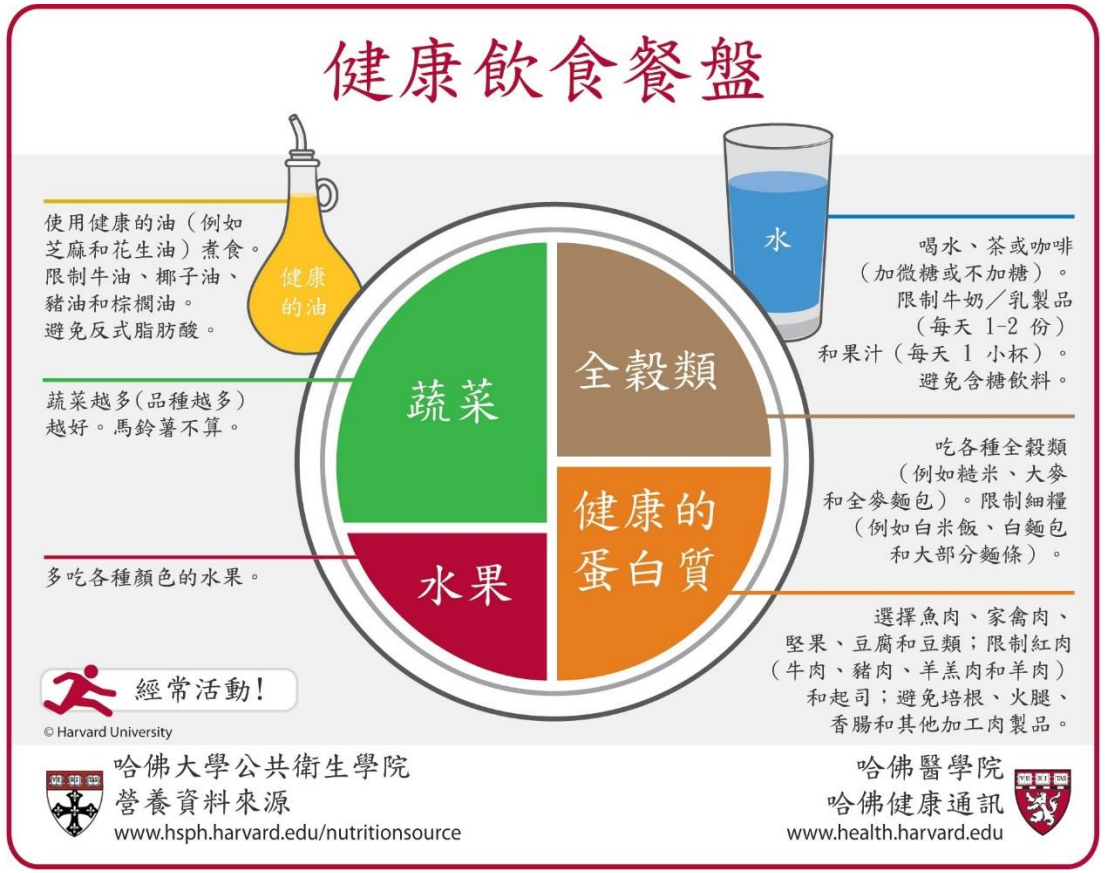


Fig. 8. Interventions relevant to cancer survivors and palliative care advanced cancer patients.

癌症存活者

- 建議癌症存活者應進行**規律的身體活動**(Recommendation C5-1; strength of recommendation strong e Level of evidence low e consensus)
- 針對癌症存活者，建議**維持健康體重 (BMI 18.5-25 kg/m2) 和健康的生活型態**，包括：維持身體活動，並採用以蔬菜、水果、全穀類為基礎，且少飽和脂肪酸、少紅肉與少酒精的飲食型態。(Recommendation C5- 2; strength of recommendation strong e Level of evidence low e strong consensus)

健康飲食餐盤


使用健康的油（例如芝麻和花生油）煮食。限制牛油、椰子油、豬油和棕櫚油。避免反式脂肪酸。
健康的油
水
喝水、茶或咖啡（加微糖或不加糖）。限制牛奶／乳製品（每天 1-2 份）和果汁（每天 1 小杯）。避免含糖飲料。
蔬菜越多（品種越多）越好。馬鈴薯不算。
蔬菜
全穀類
吃各種全穀類（例如糙米、大麥和全麥麵包）。限制細糧（例如白米飯、白麵包和大部分麵條）。
健康的蛋白質
水果
多吃各種顏色的水果。
選擇魚肉、家禽肉、堅果、豆腐和豆類；限制紅肉（牛肉、豬肉、羊羔肉和羊肉）和起司；避免培根、火腿、香腸和其他加工肉製品。
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未接受抗癌治療的晚期癌症患者

- 建議常規篩檢是否有營養攝取不足、體重減輕和 BMI 降低的狀況，如果發現有相關風險，應進一步評估患者的可治療性 nutrition impact symptom 與代謝混亂。 (Recommendation C6-1; strength of recommendation strong e Level of evidence low e consensus)
- 建議僅在與個案一起考量疾病的預後、對生活品質的預期、潛在存活率，以及營養照護相關的負擔後，才對晚期癌症患者進行營養介入。 (Recommendation C6-2; strength of recommendation strong e Level of evidence low e consensus)
- 對於**瀕死**的患者，建議以**舒適**為原則進行照護。**靜脈補充水分和營養不太可能為大多數患者帶來任何益處。**然而，若出現急性意識模糊，可建議使用短暫、有限度地液體補充來排除由脫水所引發的急性意識模糊狀況。(Recommendation C6-3; strength of recommendation strong e Level of evidence low e strong consensus)

Be Strong and Smile....