



# CONTINUITY OF NUTRITION CARE

optimal  
nutritional care  
for all

## THE POWER OF CONCERTED EFFORTS AGAINST MALNUTRITION



### Nutrition and disease prevention

- Move More
- Eat smart!

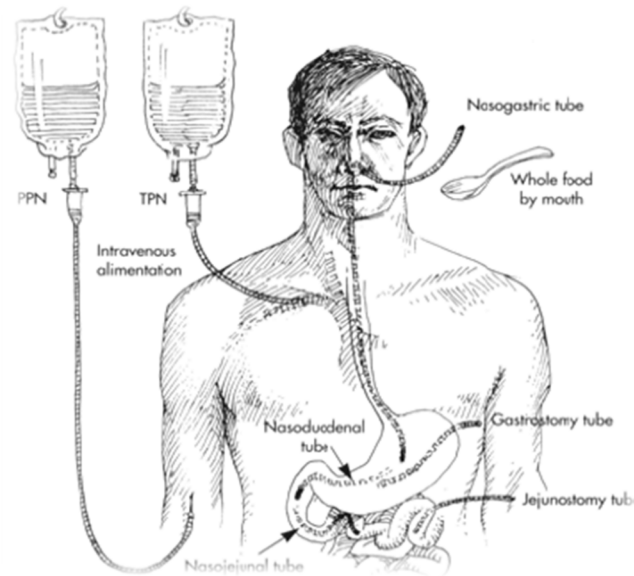
### Nutritional support during disease and therapy

- adequate energy intake
- adequate protein intake

### Nutrition and relapse prevention

- Move More
- Eat smart!

THE POWER OF CONCERTED EFFORTS AGAINST MALNUTRITION



International Conference Amsterdam 15 & 16 June

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## Nutrition and disease prevention

## Nutrition and relapse prevention

- Move More
- Eat smart!

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ABOUT **1/3** OF  
THE MOST COMMON  
CANCERS COULD BE  
**PREVENTED**  
THROUGH **DIET, WEIGHT**  
AND **PHYSICAL ACTIVITY**



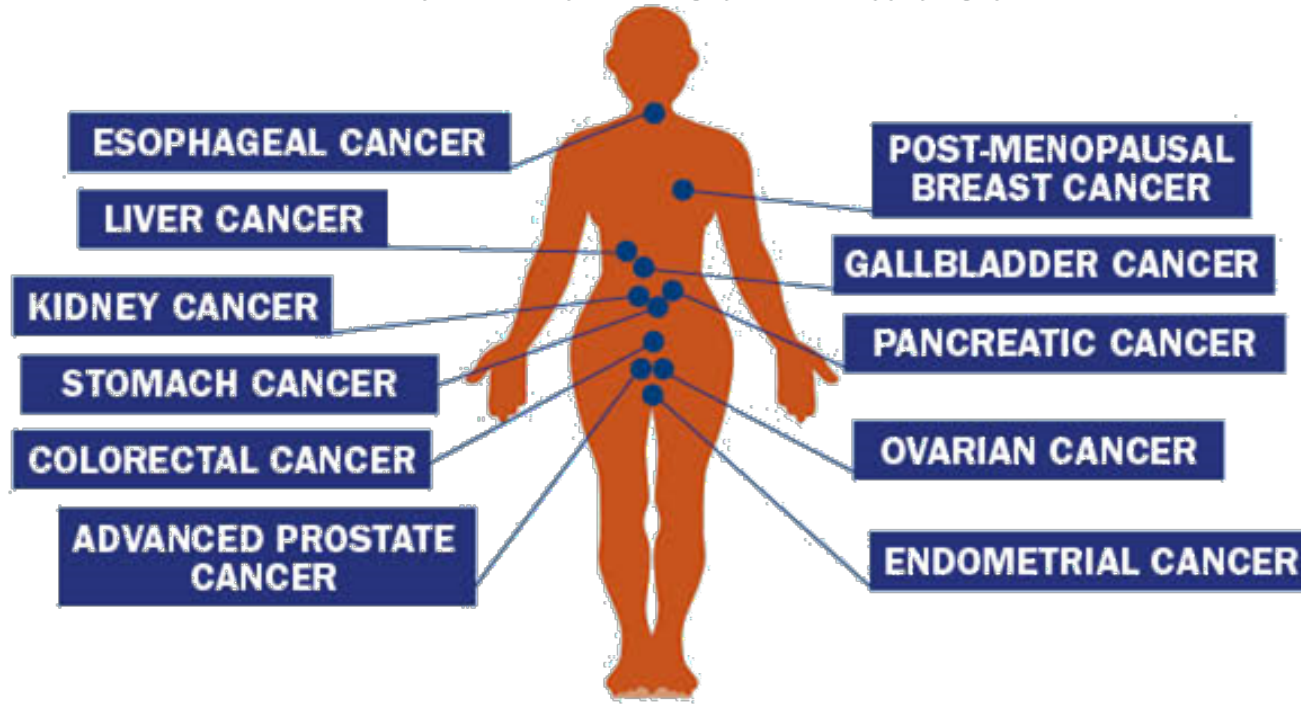
World  
Cancer  
Research  
Fund International



After not smoking,  
**BEING AT A HEALTHY WEIGHT**  
Is **THE MOST IMPORTANT THING** you can do  
to prevent cancer.



Overweight and obesity  
**INCREASE RISK FOR**



# DIET, NUTRITION, PHYSICAL ACTIVITY AND BREAST CANCER SURVIVAL (BY TIMEFRAME)

	Timing of exposure assessment	BEFORE DIAGNOSIS				LESS THAN 12 MONTHS AFTER DIAGNOSIS				12 MONTHS OR MORE AFTER DIAGNOSIS			
		DECREASES RISK		INCREASES RISK		DECREASES RISK		INCREASES RISK		DECREASES RISK		INCREASES RISK	
		Exposure	Outcome	Exposure	Outcome	Exposure	Outcome	Exposure	Outcome	Exposure	Outcome	Exposure	Outcome
<b>STRONG EVIDENCE</b>	Convincing												
	Probable												
<b>LIMITED EVIDENCE</b>	Limited-suggestive	Physical activity	All mortality BC mortality	Body fatness	All mortality BC mortality <sup>2</sup> 2nd BC		Body fatness	All mortality BC mortality <sup>2</sup> 2nd BC	Physical activity	All mortality	Body fatness	All mortality	
		Foods containing fibre	All mortality	Total fat	All mortality				Foods containing fibre	All mortality			
	Limited-no conclusion <sup>1</sup>	Fruits, vegetables, foods containing folate, foods containing soy, carbohydrate, glycaemic index, glycaemic load, protein, dietary supplements, alcoholic drinks, dietary patterns, overweight, body fatness (premenopause), adult attained height, energy intake				Foods containing fibre, carbohydrate, protein, total fat, saturated fatty acids, alcoholic drinks, physical activity, overweight, body fatness (premenopause), adult attained height, energy intake				Fruits, vegetables, foods containing fibre, foods containing folate, foods containing soy, carbohydrate, glycaemic index, glycaemic load, protein, total fat, saturated fatty acids, alcoholic drinks, dietary patterns, physical activity, body fatness, overweight, height, energy intake			
<b>STRONG EVIDENCE</b>	Substantial effect on risk unlikely												

All mortality, All cause mortality; BC mortality, breast cancer mortality; 2nd BC, Second primary breast cancer

**STRONG:** Evidence strong enough to support a judgement of a convincing or probable causal relationship and generally justify making recommendations

**LIMITED:** Evidence that is too limited to justify making specific recommendations

<sup>1</sup> Includes various exposure-outcome combinations where evidence was available but too limited to draw conclusions. For more details of the outcomes related to the exposures listed here, see the full Breast Cancer Survivors SLR

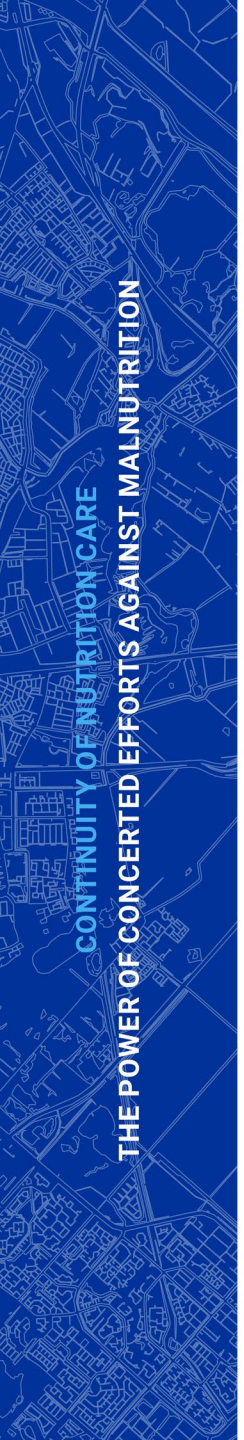
<sup>2</sup> Postmenopause only

2016	DIET, NUTRITION, PHYSICAL ACTIVITY AND OESOPHAGEAL ADENOCARCINOMA		
		DECREASES RISK	INCREASES RISK
STRONG EVIDENCE	Convincing		Body fatness <sup>1</sup>
	Probable		

<sup>1</sup> Body fatness is marked by body mass index (BMI), waist circumference and waist-hip ratio.

2016	DIET, NUTRITION, PHYSICAL ACTIVITY AND OESOPHAGEAL SQUAMOUS CELL CARCINOMA		
		DECREASES RISK	INCREASES RISK
STRONG EVIDENCE	Convincing		Alcoholic drinks
	Probable		Mate <sup>1</sup>

<sup>1</sup> As drunk traditionally in parts of South America, scalding hot through a metal straw.



# International

## CONTINUITY OF NUTRITION CARE THE POWER OF CONCERTED EFFORTS AGAINST MALNUTRITION

To reference this matrix please use the following citation:  
 World Cancer Research Fund/ American Institute for Cancer Research. Continuous Update Project: Diet, Nutrition, Physical Activity and the Prevention of Cancer. Summary of Strong Evidence. Available at: [wcrf.org/cupmatrix](http://wcrf.org/cupmatrix) accessed on DD-MM-YYYY

Abbreviation: SLR, systematic literature review.

	Wholegrains	Foods containing dietary fibre	Aflatoxins	Foods containing beta-carotene	Non-starchy vegetables or fruit (aggregated) <sup>2</sup>	Red meat	Processed meat	Cantonese-style salted fish	Dairy products	Foods preserved by salting	Arsenic in drinking water	Mate	Coffee	Sugar sweetened drinks	Alcoholic drinks	'Mediterranean type' dietary pattern	'Western type' diet	'Fast foods'	Glycaemic load	High-dose beta-carotene supplements	Beta-carotene	Calcium supplements	Physical activity (moderate and vigorous)	Vigorous physical activity	Walking	Screen time (children) <sup>15</sup>	Screen time (adults) <sup>15</sup>	Adult body fatness <sup>16</sup>	Body fatness in young adulthood <sup>15</sup>	Adult weight gain	Adult attained height <sup>21</sup>	Greater birthweight	Lactation <sup>22</sup>	Having been breastfed				
<b>MOUTH, PHARYNX, LARYNX</b> 2018															1																							
<b>NASOPHARYNX</b> 2017 (SLR)								2																														
<b>OESOPHAGUS (ADENOCARCINOMA)</b> 2016																																						
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<b>COLORECTUM</b> 2017	3	3					4	4	4	4					6						12	13																
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<b>BLADDER</b> 2015																																						
<b>SKIN</b> 2017 (SLR)																																						
<b>AERODIGESTIVE CANCERS (AGGREGATED)</b> 2016-2018 <sup>1</sup>																																						
<b>RISK OF WEIGHT GAIN, OVERWEIGHT OR OBESITY</b> 2018 <sup>23,24</sup>	14	14												14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14		



Convincing decreases risk



Probable decreases risk



Probable increases risk



Convincing increases risk



Substantial effect on risk unlikely

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# International

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Alfa toxins
Foods containing beta-carotene
Non-starchy vegetables or fruit (aggregated) <sup>2</sup>
Red meat
Processed meat
Cantonese-style salted fish
Dairy products
Foods preserved by salting
Arsenic in drinking water
Mate
Coffee
Sugar sweetened drinks
Alcoholic drinks
'Mediterranean type' dietary pattern
'Western type' diet
'Fast foods'
Glycaemic load
High-dose beta-carotene supplements
Beta-carotene
Calcium supplements
Physical activity (moderate and vigorous)
Vigorous physical activity
Walking
Screen time (children) <sup>15</sup>
Screen time (adults) <sup>15</sup>
Adult body fatness <sup>16</sup>
Body fatness in young adulthood <sup>19</sup>
Adult weight gain
Adult attained height <sup>21</sup>
Greater birthweight
Lactation <sup>22</sup>
Having been breastfed



- Green: Convincing decreases risk
- Light Green: Probable decreases risk
- Orange: Probable increases risk
- Red: Convincing increases risk
- Grey: Substantial effect on risk unlikely

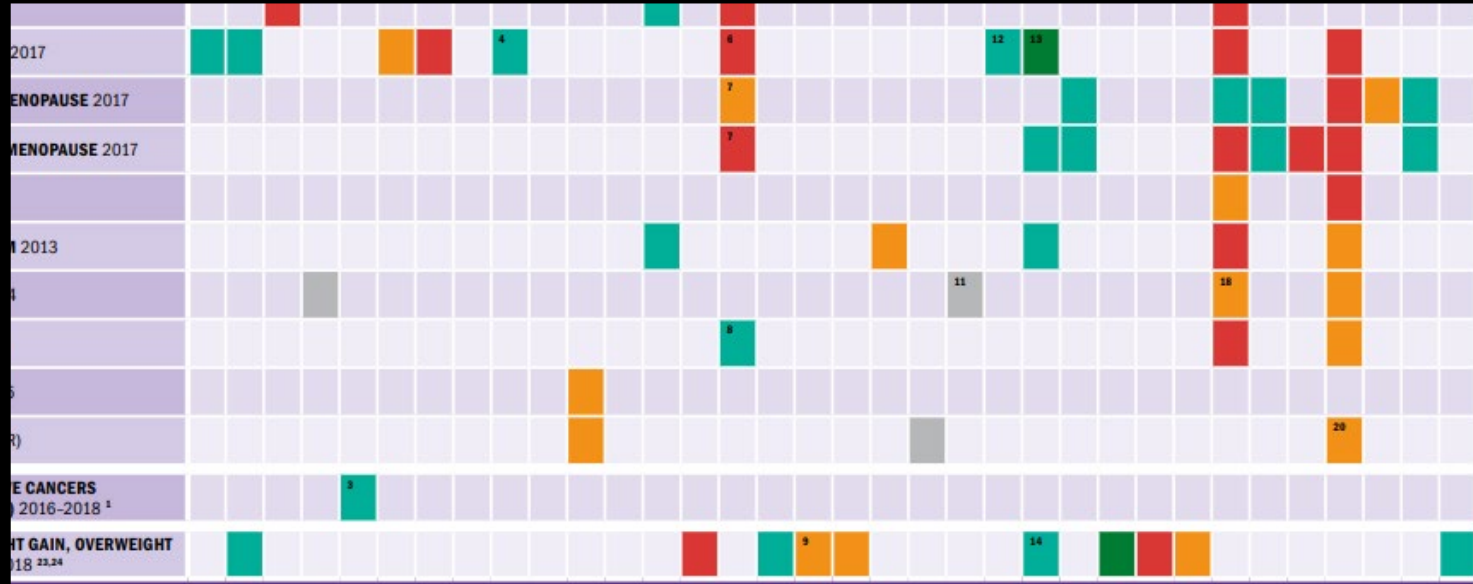
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- NASOPHARYNX 2017 (SLR)
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- RISK OF WEIGHT GAIN, OVERWEIGHT OR OBESITY 2018 <sup>23,24</sup>

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 Research Fund/ Institute for Cancer Continuous Update Nutrition, Physical Activity and the Prevention of Cancer: A Global Perspective  
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 Beta-carotene  
 Vitamins or fruit (aggregated) <sup>2</sup>  
 Salted fish  
 Salting  
 Water  
 Alcoholic drinks  
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 Greater birthweight  
 Lactation <sup>22</sup>  
 Having been breastfed

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Decreasing decreases risk  
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Research Fund/ (regated) 2 (use)

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- Adult body fatness <sup>15</sup>
- Body fatness in young adulthood <sup>19</sup>
- Adult weight gain
- Adult attained height <sup>21</sup>
- Greater birthweight
- Lactation <sup>22</sup>
- Having been breastfed

Decreasing decreases risk   Probable decreases risk   Probable increases risk   Convincing increases risk   Substantial effect on risk unlikely

**Be a healthy weight**

Keep your weight within the healthy range and avoid weight gain in adult life

**Be physically active**

Be physically active as part of everyday life – walk more and sit less

**Eat a diet rich in wholegrains, vegetables, fruit and beans**

Make wholegrains, vegetables, fruit, and pulses (legumes) such as beans and lentils a major part of your usual daily diet

**Limit consumption of ‘fast foods’ and other processed foods high in fat, starches or sugars**

Limiting these foods helps control calorie intake and maintain a healthy weight

**Limit consumption of red and processed meat**

Eat no more than moderate amounts of red meat, such as beef, pork and lamb. Eat little, if any, processed meat

**Limit consumption of sugar sweetened drinks**

Drink mostly water and unsweetened drinks

**Limit alcohol consumption**

For cancer prevention, it’s best not to drink alcohol

**Do not use supplements for cancer prevention**

Aim to meet nutritional needs through diet alone

**For mothers: breastfeed your baby, if you can**

Breastfeeding is good for both mother and baby

**After a cancer diagnosis: follow our Recommendations, if you can**

Check with your health professional what is right for you



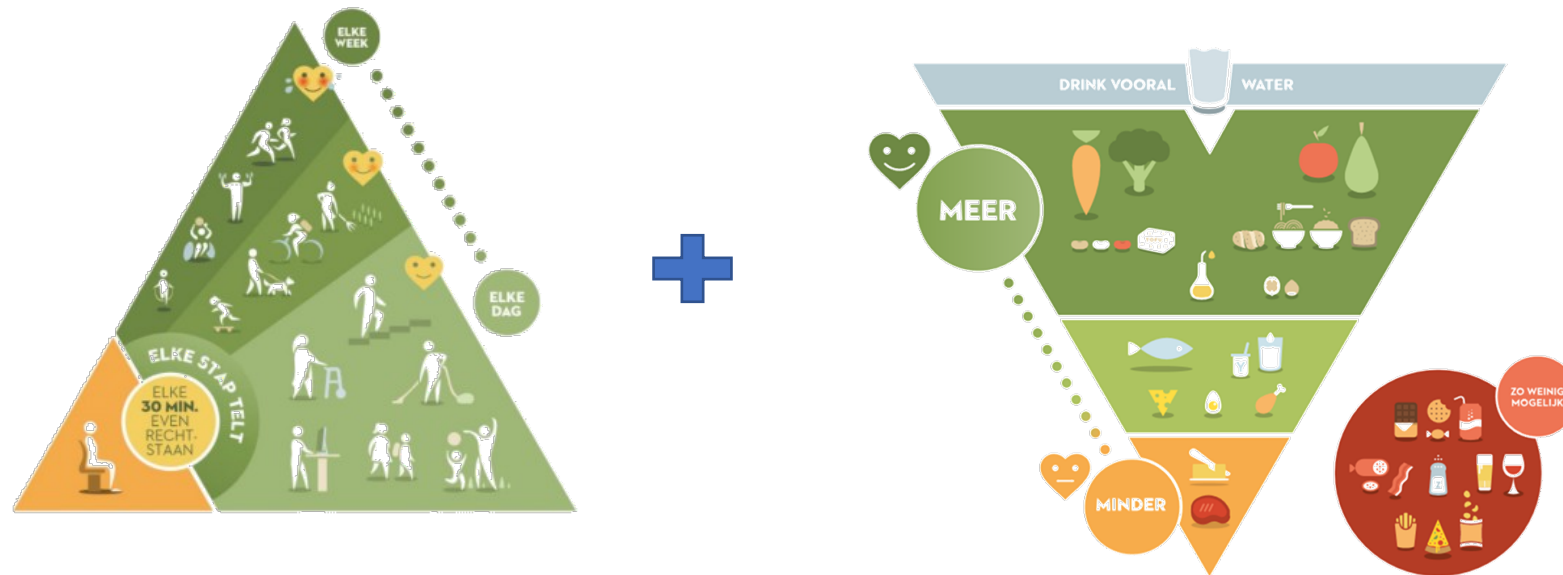
# PROTECT YOURSELF!

**Move More** 

**Eat Smart** 



World Cancer Research Fund International



### Nutrition and disease prevention

- Move More
- Eat smart!

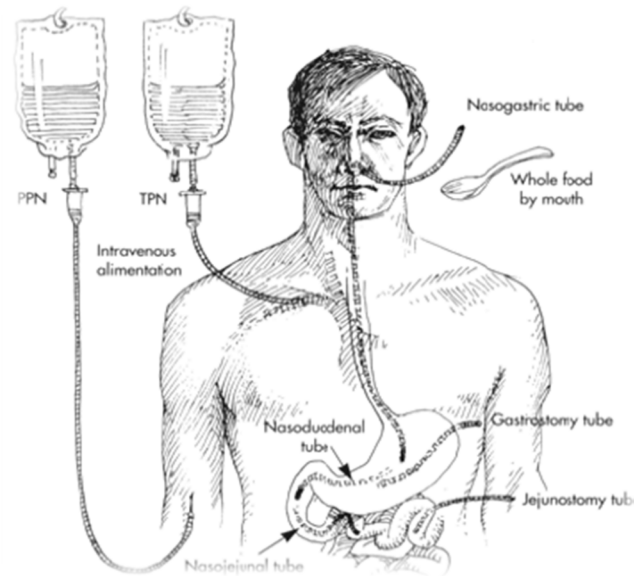
### Nutritional support during disease and therapy

- adequate energy intake
- adequate protein intake

### Nutrition and relapse prevention

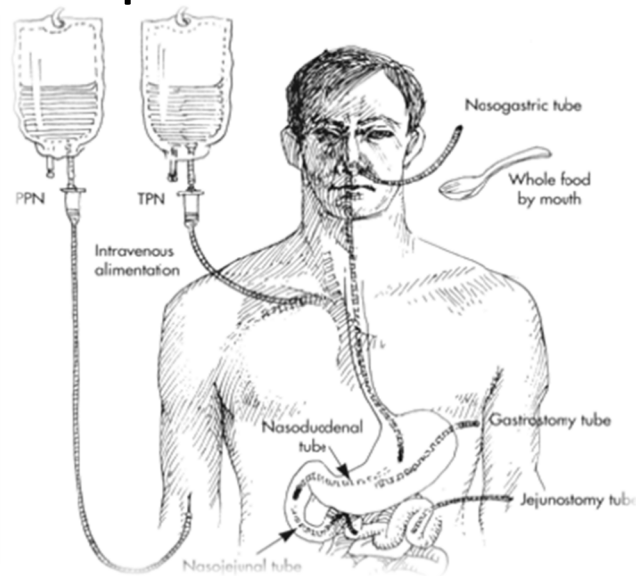
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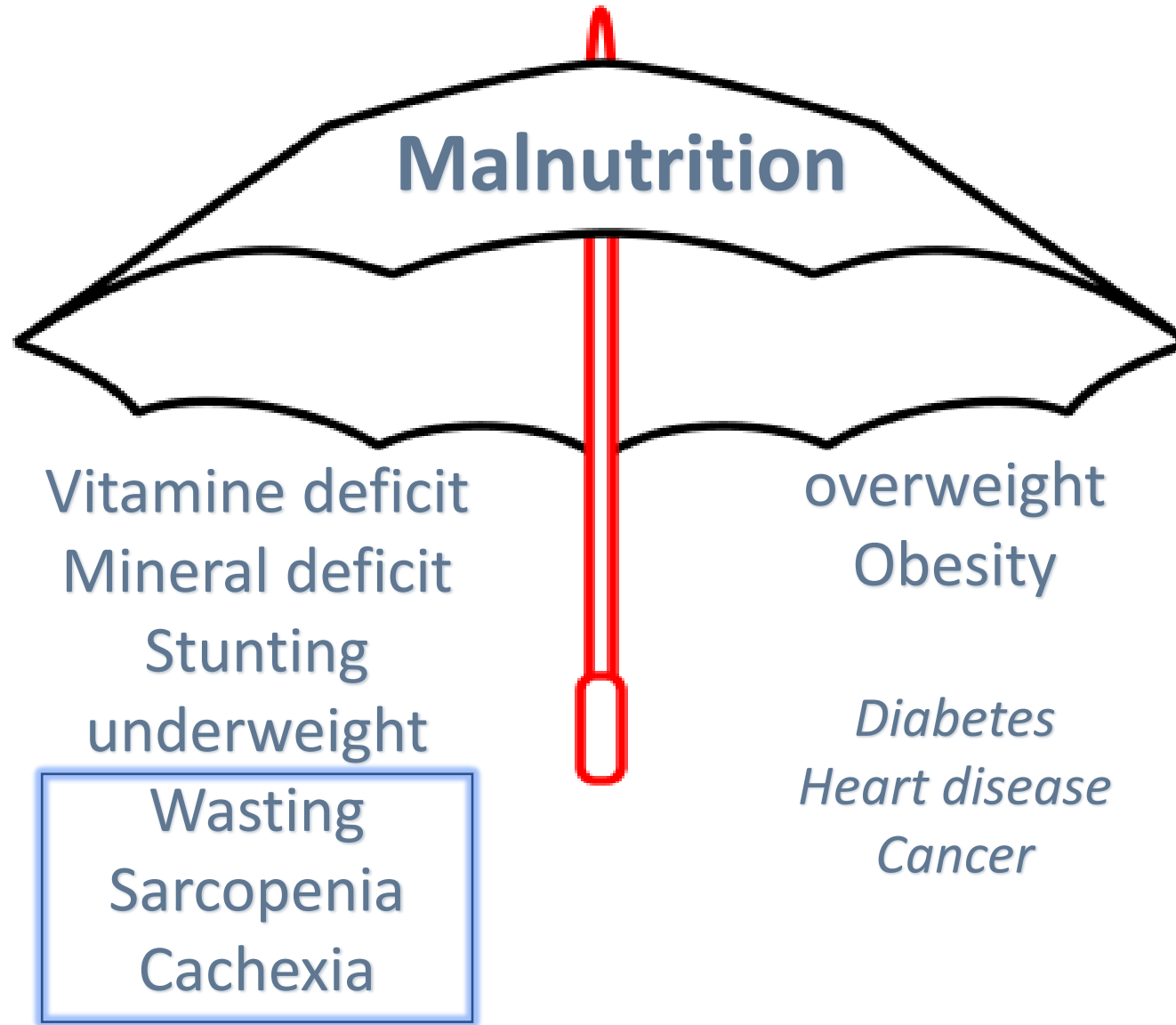
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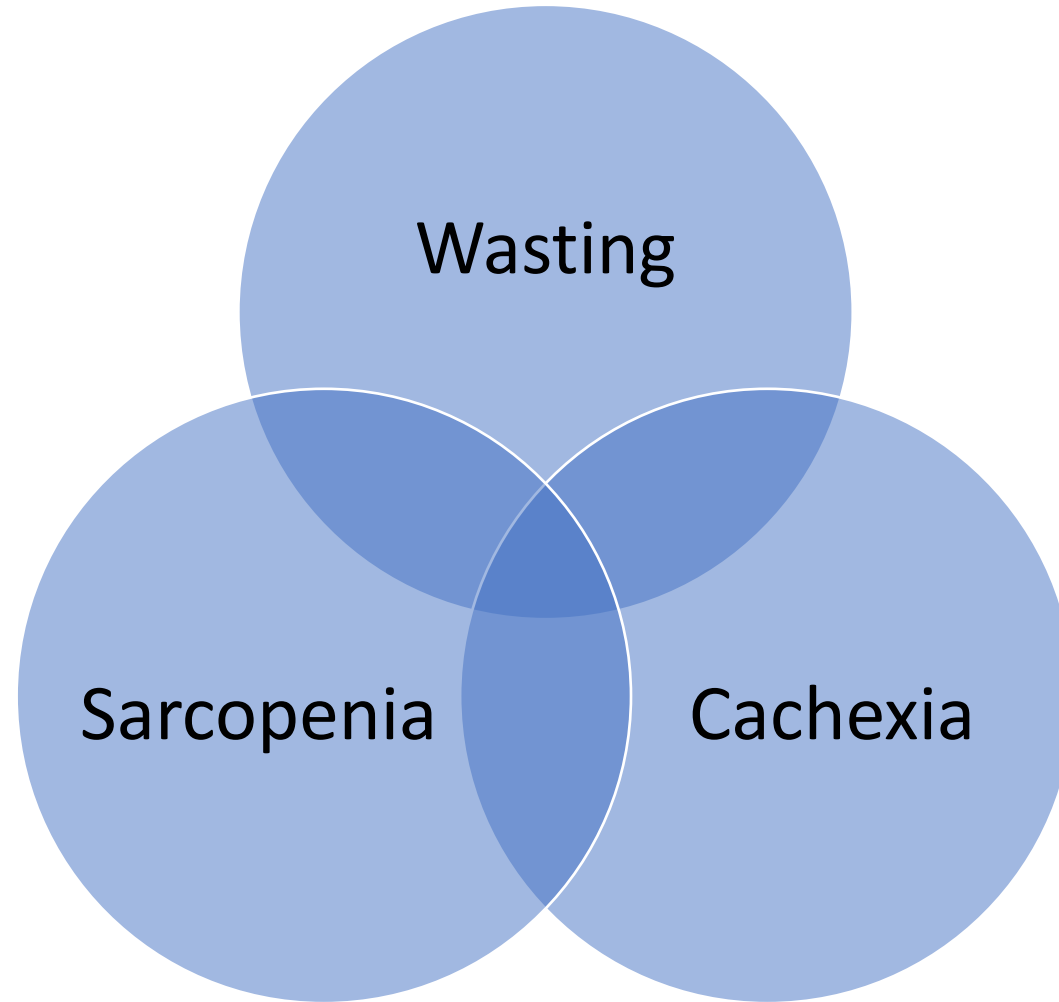
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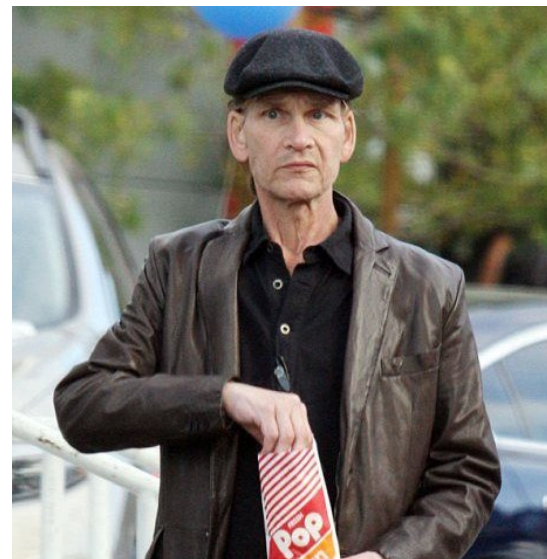
# • Sarcopenia

- arnold schwarzenegger



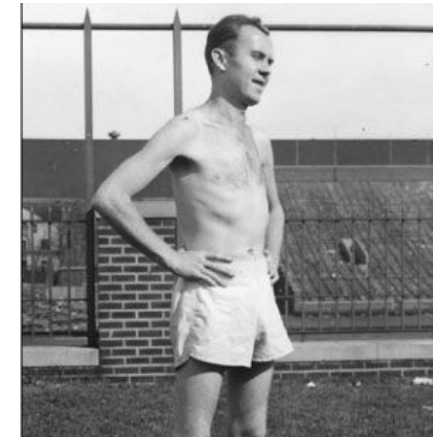
# • Cachexia

- Patrick Swayze



# • Wasting

- The Minnesota Starvation Experiment



	Sarcopenia	Cachexia	Wasting
<b>Muscle loss</b>	Yes	Yes	Not always
<b>Weight loss</b>	Not always	Yes	Yes
<b>Low energy intake</b>	Not always	Yes (Anorexia)	Yes
<b>Hight energy need</b>	Not always	Yes	Not always
<b>Inflammation</b>	No	Yes	No
<b>Therapy</b>	-optimize intake -Muscle training	-optimize intake -Muscle training -Anti inflammation therapy	-optimize intake -Muscle training
<b>High risk population</b>	Elderly	Cancer pt	Alcohol abuse

Place your bets, who will be the star of the show?



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Who is the Star of the show?

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CONTINUITY OF NUTRITION CARE

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Don't be distracted by the obvious



A newbie can be the game changer!





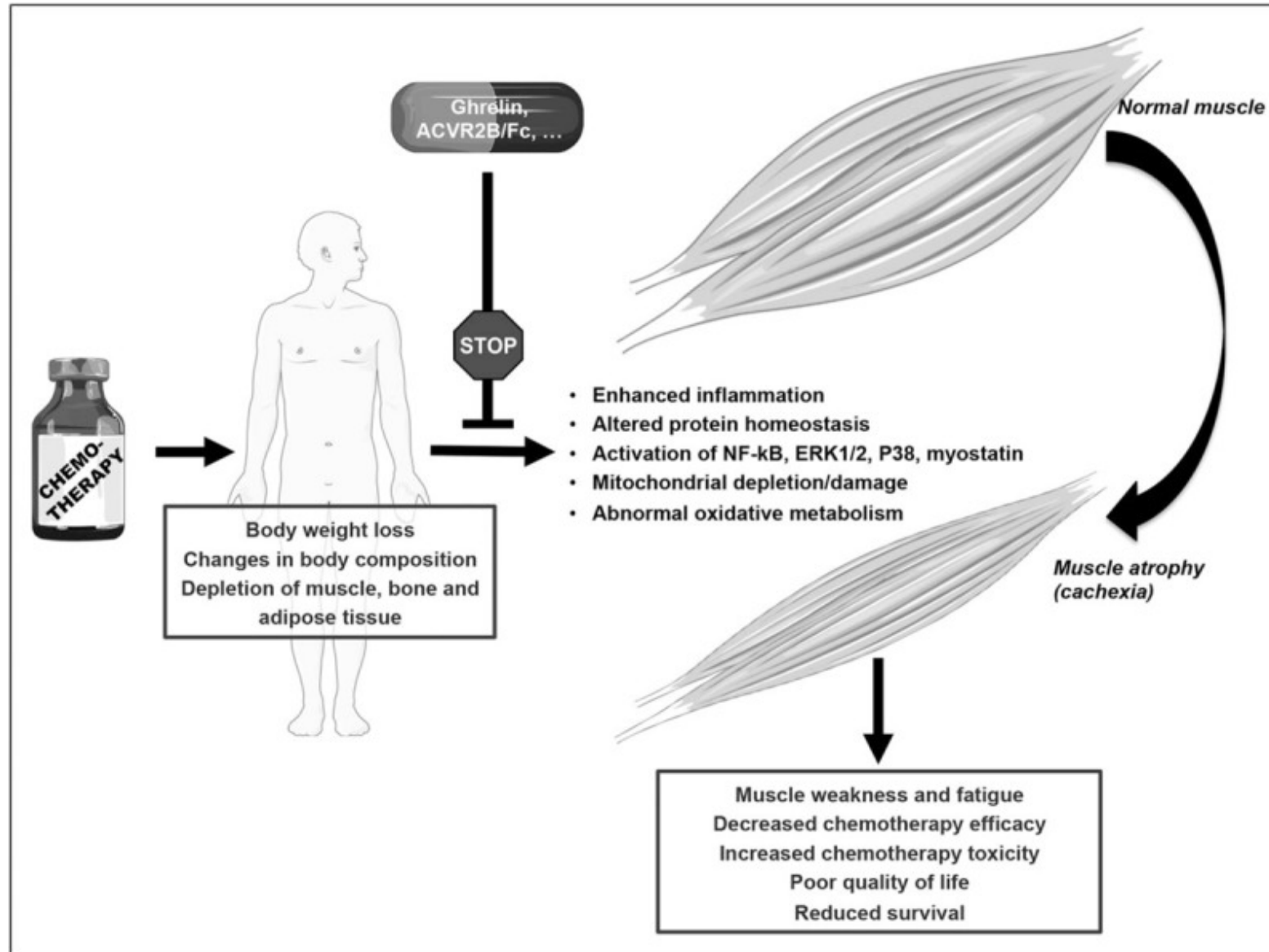
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# Who is the newbie in Nutrition?

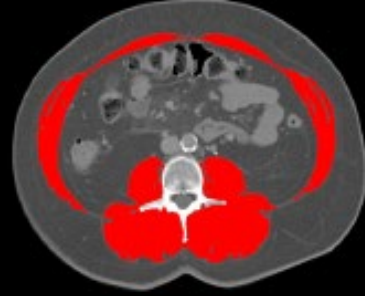
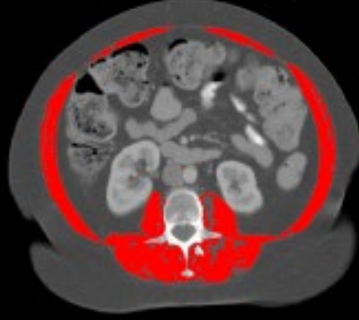
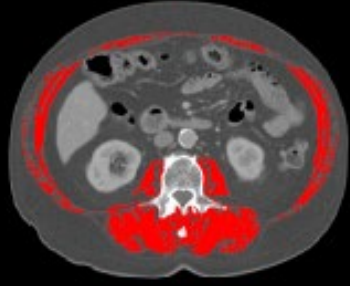
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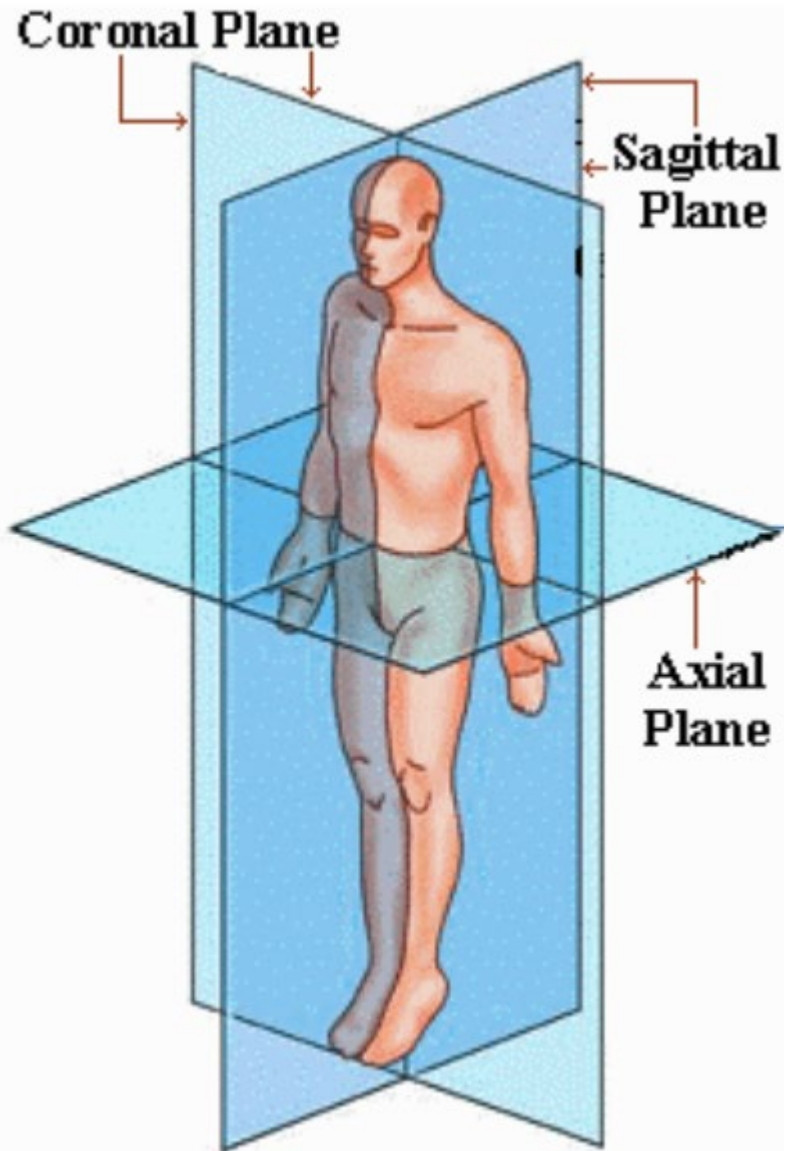




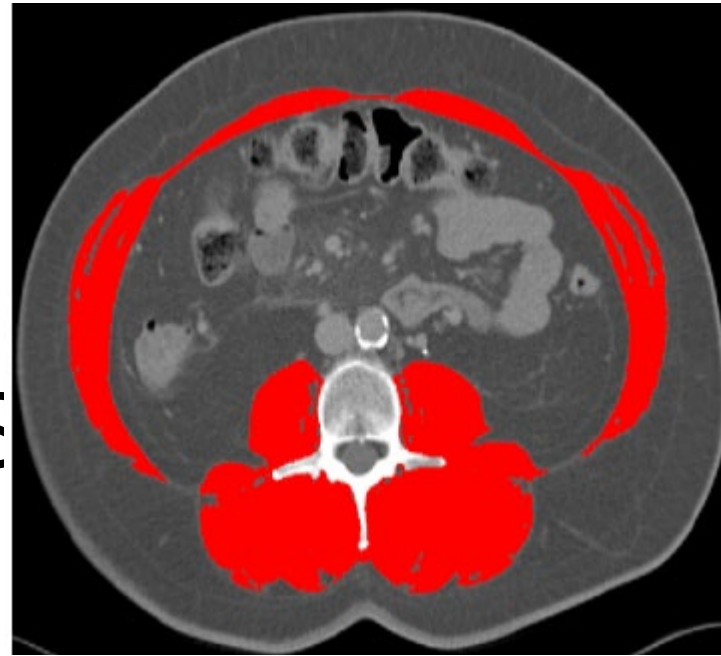
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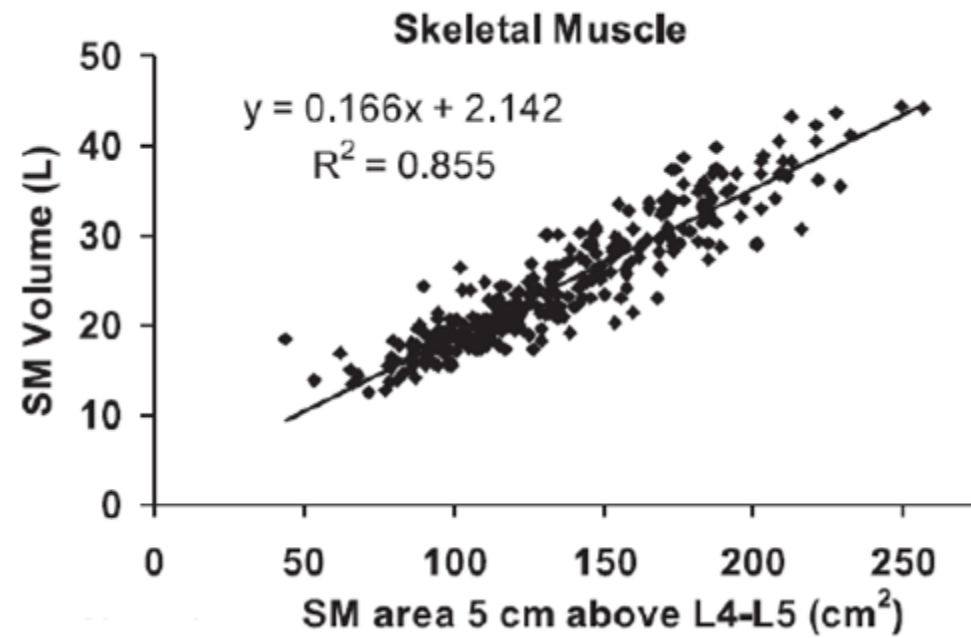


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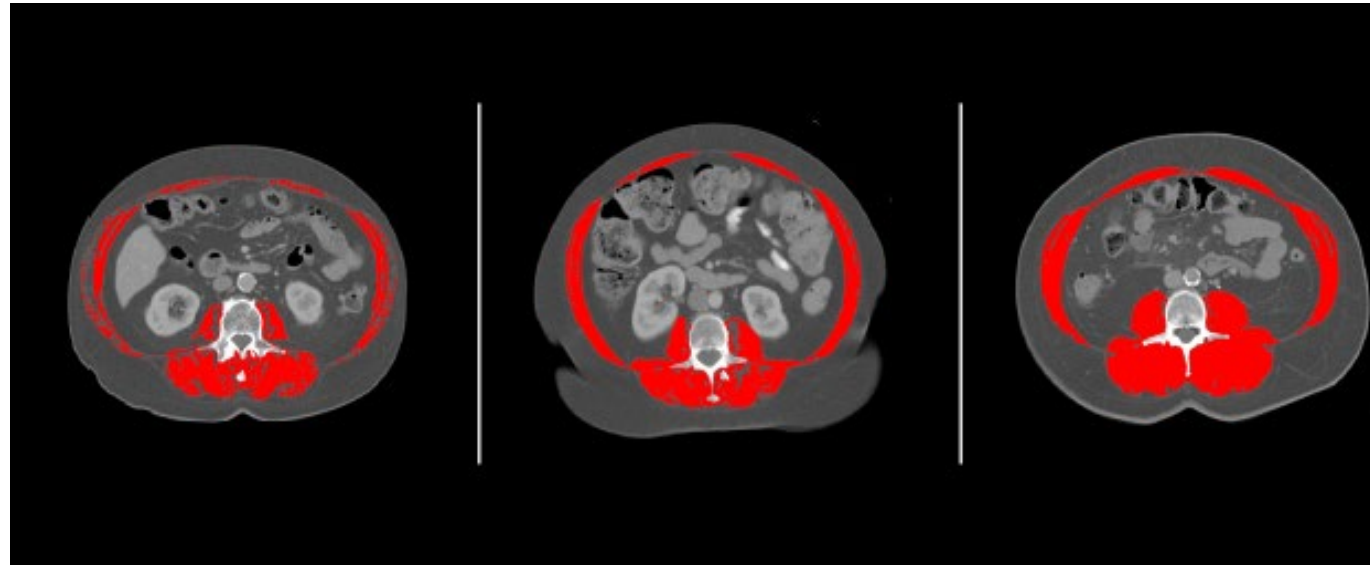


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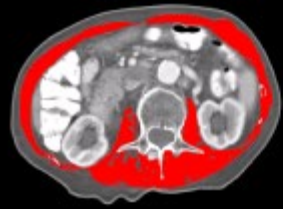


- BMI = 30.0 kg/m<sup>2</sup>
- Sarcopenia = Severe muscle depletion

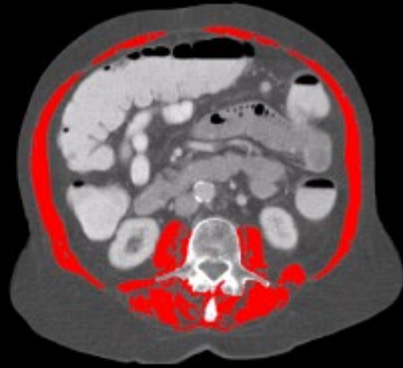


CT Images Martin L et al. J Clinical Oncology 2013 31(12):1539-47

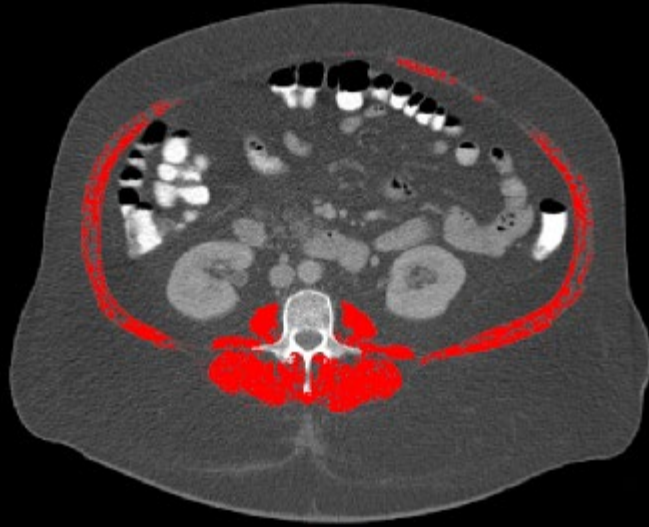
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a

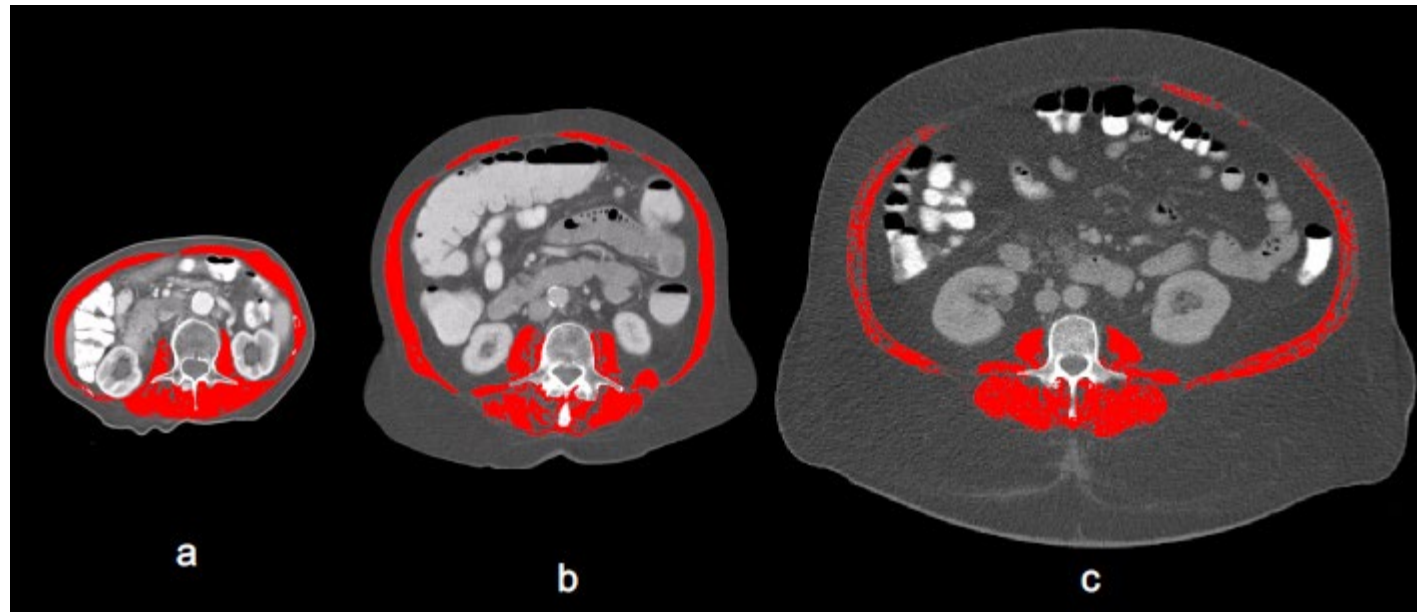


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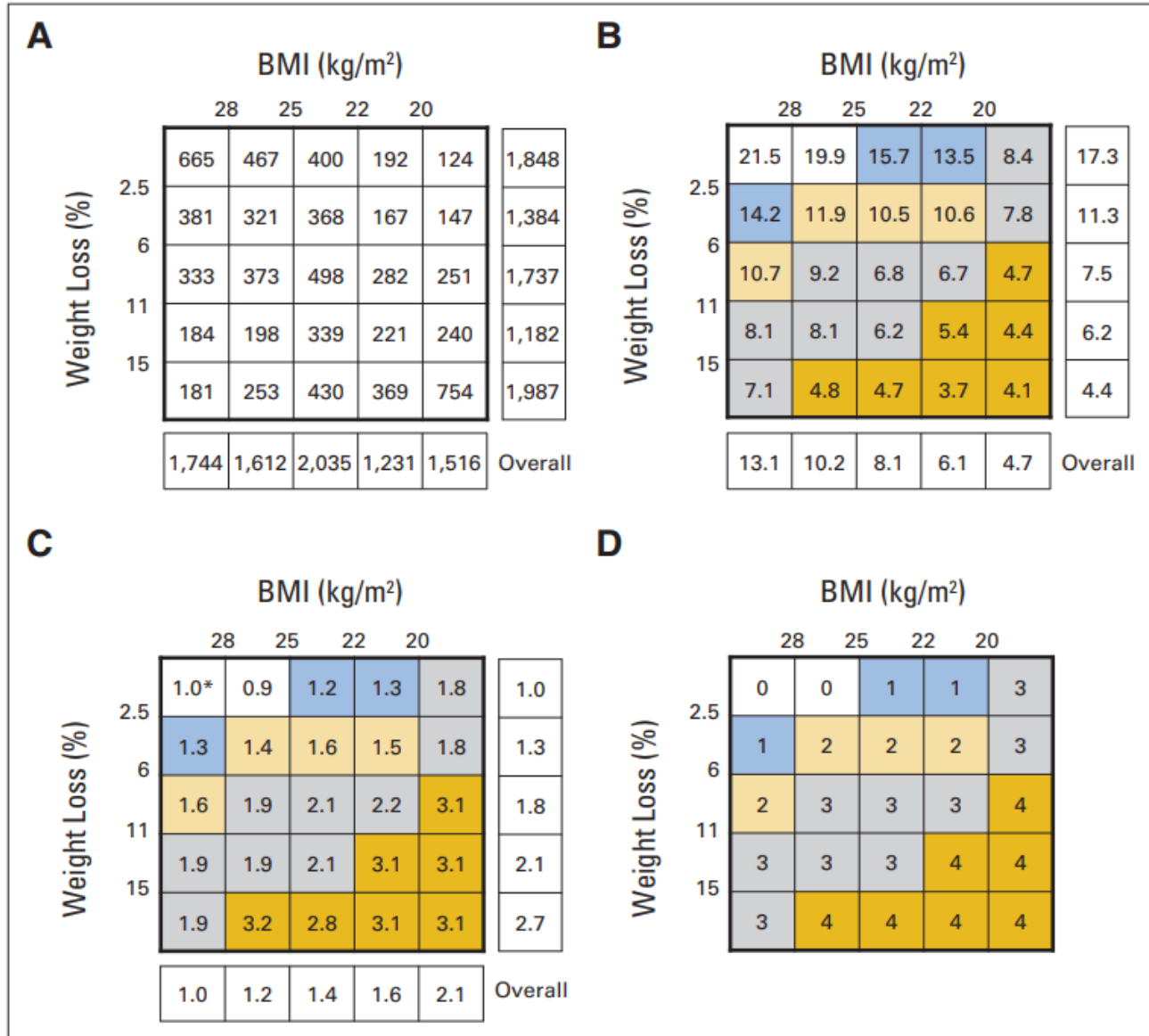
c

- BMI = a16.4 - b24.8 - c40.2 kg/m<sup>2</sup>
- Variation in fat - identical muscle mass

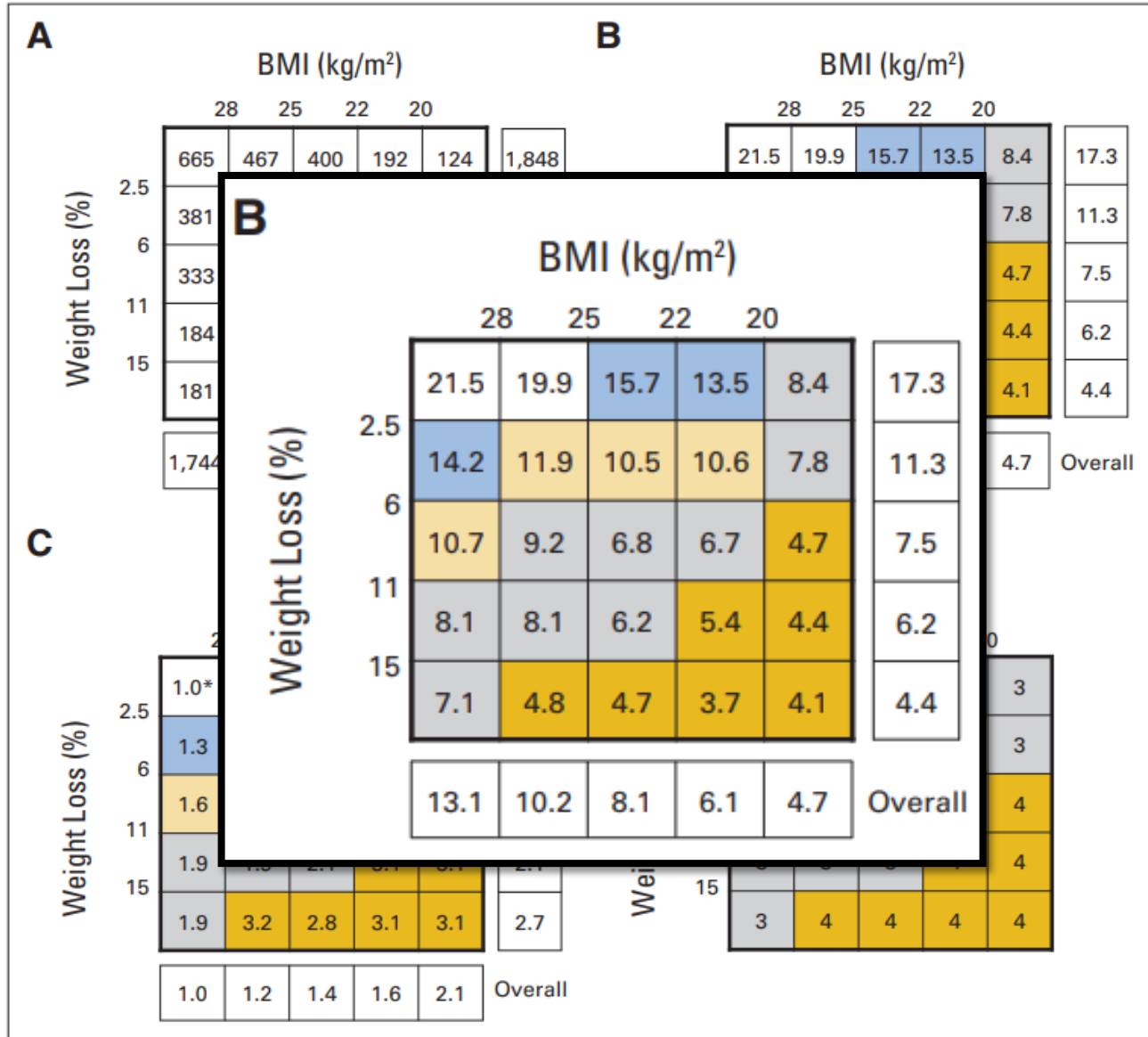


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**Fig 2.** Risk of reduced survival is a function of body mass index (BMI) and percent weight loss (%WL). Panels A to C represent a 5 × 5 matrix analysis of the five categories of BMI and five categories of %WL for a total of 25 possible combinations. The (A) sample size, (B) median overall survival (months), and (C) unadjusted estimated hazard ratios (HRs; HR, 1.0) are presented for each cell. (\*) Reference categories are BMI ≥ 28.0 kg/m<sup>2</sup> and weight stable ± 2.4%. Different colors represent significant differences (*P* < .05) in median overall survival and HRs within and between cells of the matrix. Panel D represents the BMI-adjusted WL grading system (grades 0 to 4). Median survival times by grade were as follows: grade 0, 20.9 months (95% CI, 17.9 to 23.9 months; unadjusted HR, 1.0); grade 1, 14.6 months (95% CI, 12.9 to 16.2 months; HR, 1.3); grade 2, 10.8 months; 95% CI, 9.7 to 11.9; HR, 1.5); grade 3, 7.6 months (95% CI, 7.0 to 8.2 months; HR, 2.0), and grade 4, 4.3 months; 95% CI, 4.1 to 4.6 months; HR, 3.1; *P* < .001).

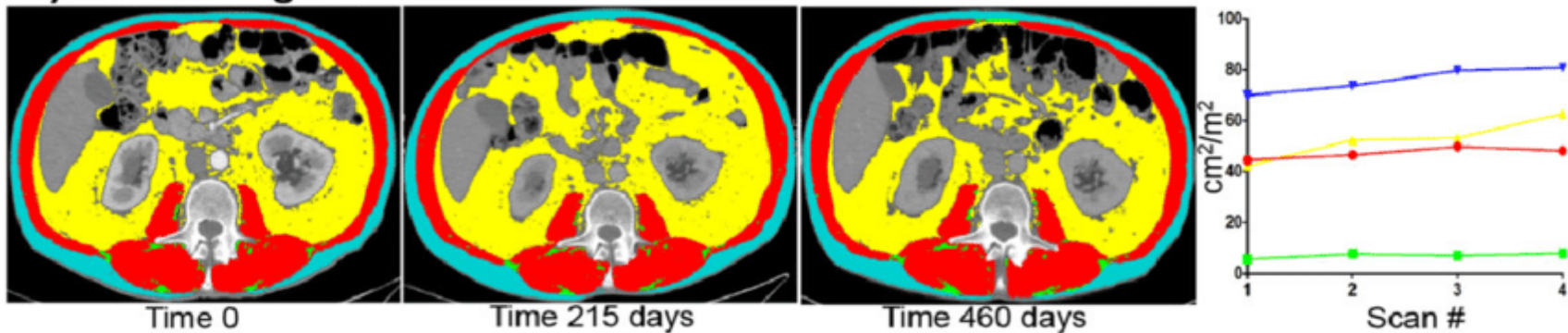


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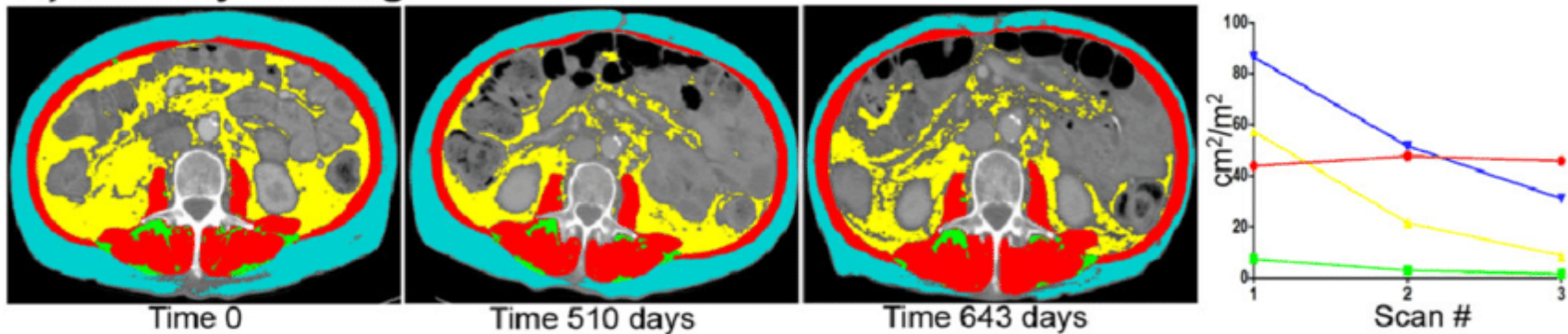
# Nutritional goals:

- Keep the patient as fit as possible:
  - Focus on muscle mass
  - Focus on muscle function

## A) No Wasting



## B) Fat-Only Wasting



# Nutritional intervention

1. Determine nutritional needs
2. Counselling for problem
  - Preferences
  - Chewing problems
  - ...
3. Enrich oral nutrition
  - “normal food” enrichments (sugar, cream, butter,..)
  - Pharmaceutical enrichments (Protein powder,..)
4. Add Oral Nutritional Supplement (ONS) to the diet
5. Enteral or parenteral nutrition

# Determine nutritional needs

- **Harris-Benedict**

- MenBMR =  $88.362 + (13.397 \times \text{weight in kg}) + (4.799 \times \text{height in cm}) - (5.677 \times \text{age in years})$
- WomenBMR =  $447.593 + (9.247 \times \text{weight in kg}) + (3.098 \times \text{height in cm}) - (4.330 \times \text{age in years})$

- **Penn State**

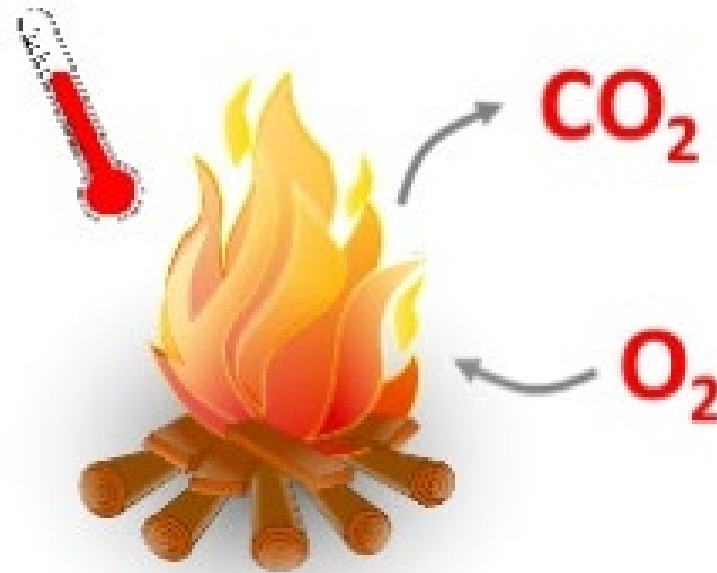
- RMR= Mifflin-St Jeor  $(0.96) + T_{\max}(167) + V_E(31) - 6212$ 
  - Tmax is maximum body temperature in the previous 24 hours (degrees Celsius);
  - Ve is minute ventilation (liters per minute)at the time of measurement read from the ventilator
- Mifflin-St Jeor
  - Men:  $10(\text{weight in kg}) + 6.25(\text{height in cm}) - 5(\text{age in years}) + 5$
  - Women:  $10(\text{weight in kg}) + 6.25(\text{height in cm}) - 5(\text{age in years}) - 161$

- **Indirect calorimetry**

- RMR= measure

## Direct Heat Measurement

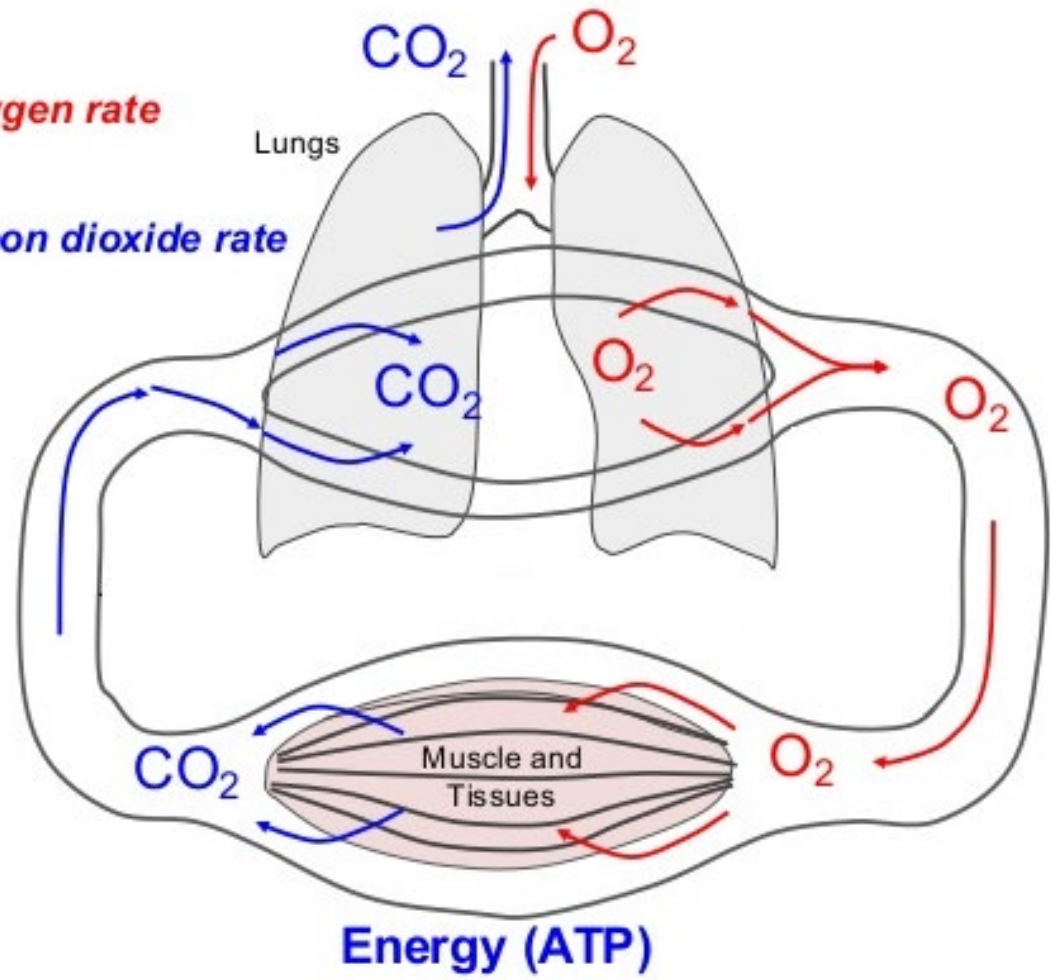
## Indirect Heat Measurement



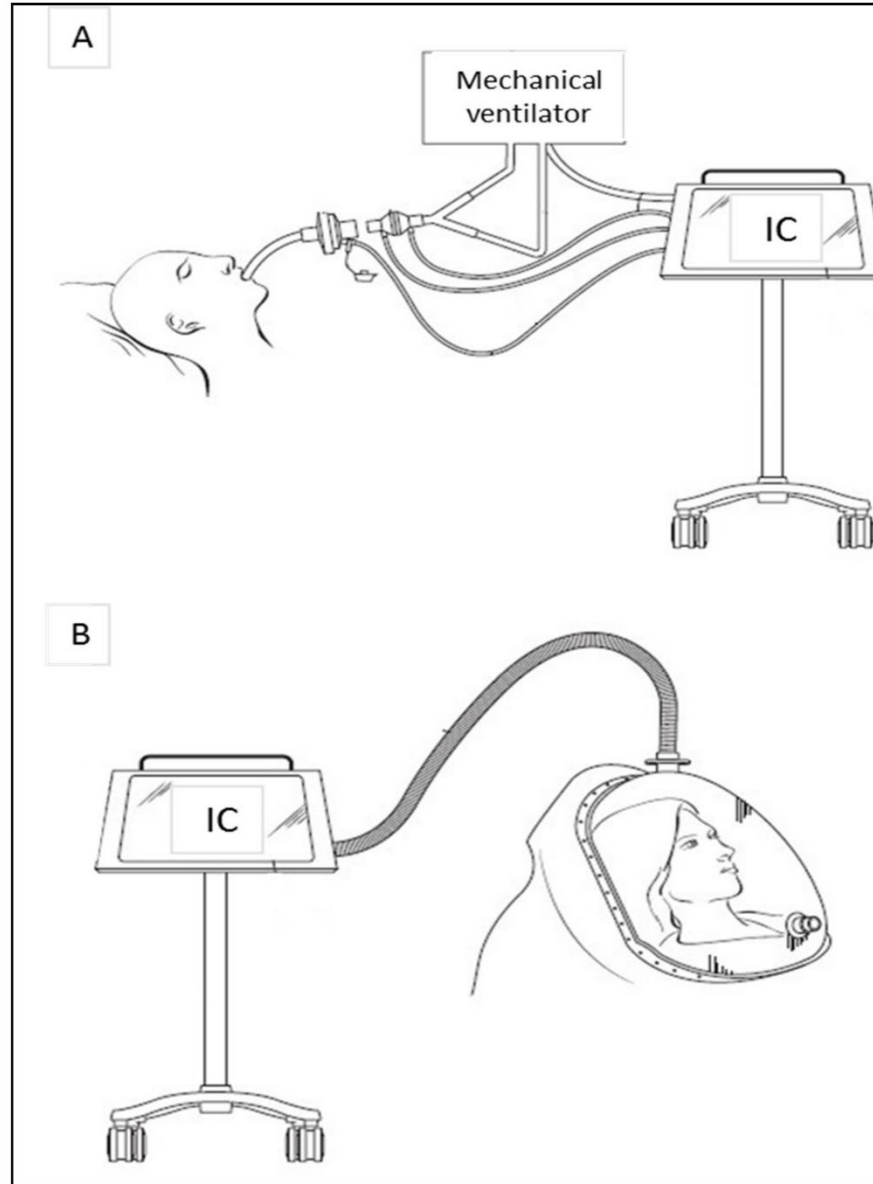
# Indirect calorimetry

•  $VO_2$   
consumed oxygen rate

•  $VCO_2$   
produced carbon dioxide rate



# Indirecte calorimetrie





### Weir Equation:

$$\text{REE (kCal/day)} = [3.9 (\text{VO}_2) + 1.1 (\text{VCO}_2)] \times 1.44$$

$\text{VO}_2$ : consumed oxygen rate (mL/min)

$\text{VCO}_2$ : produced carbon dioxide rate (mL/min)

Weir, J. B. D. (1949). "New Methods For Calculating Metabolic Rate With Special Reference To Protein Metabolism." *Journal Of Physiology-London* 109(1-2): 1-9.

Weir, J. B. D. (1990). "Nutrition Metabolism Classic - New Methods For Calculating Metabolic-Rate With Special Reference To Protein-Metabolism." *Nutrition* 6(3): 213-221.

## Direct Heat Measurement

## Indirect Heat Measurement

1900 - Atwater & Rosa's research:  
Energy expenditure of 3 men who lived in the calorimeter for 40 days

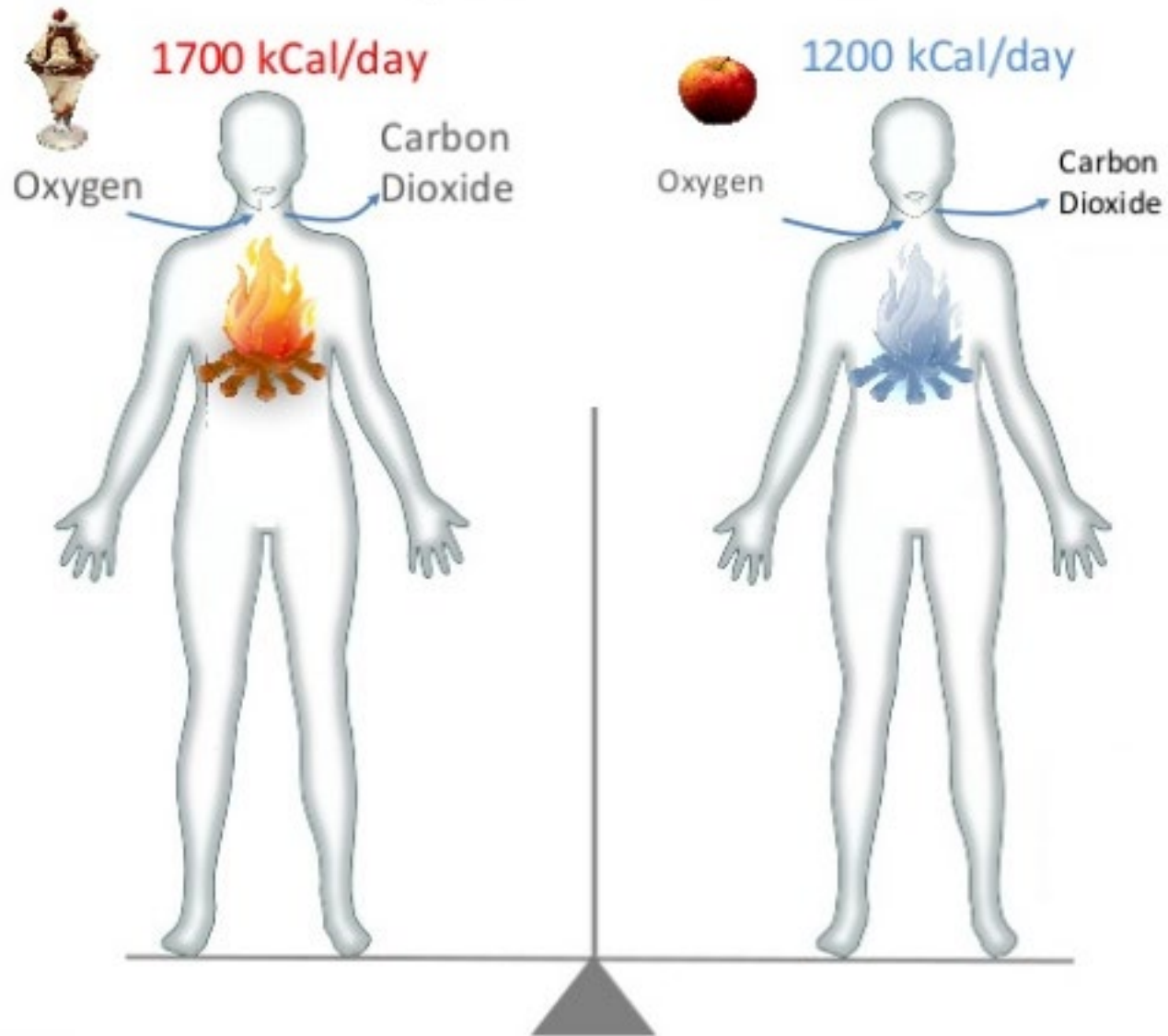
2717 kCal/day

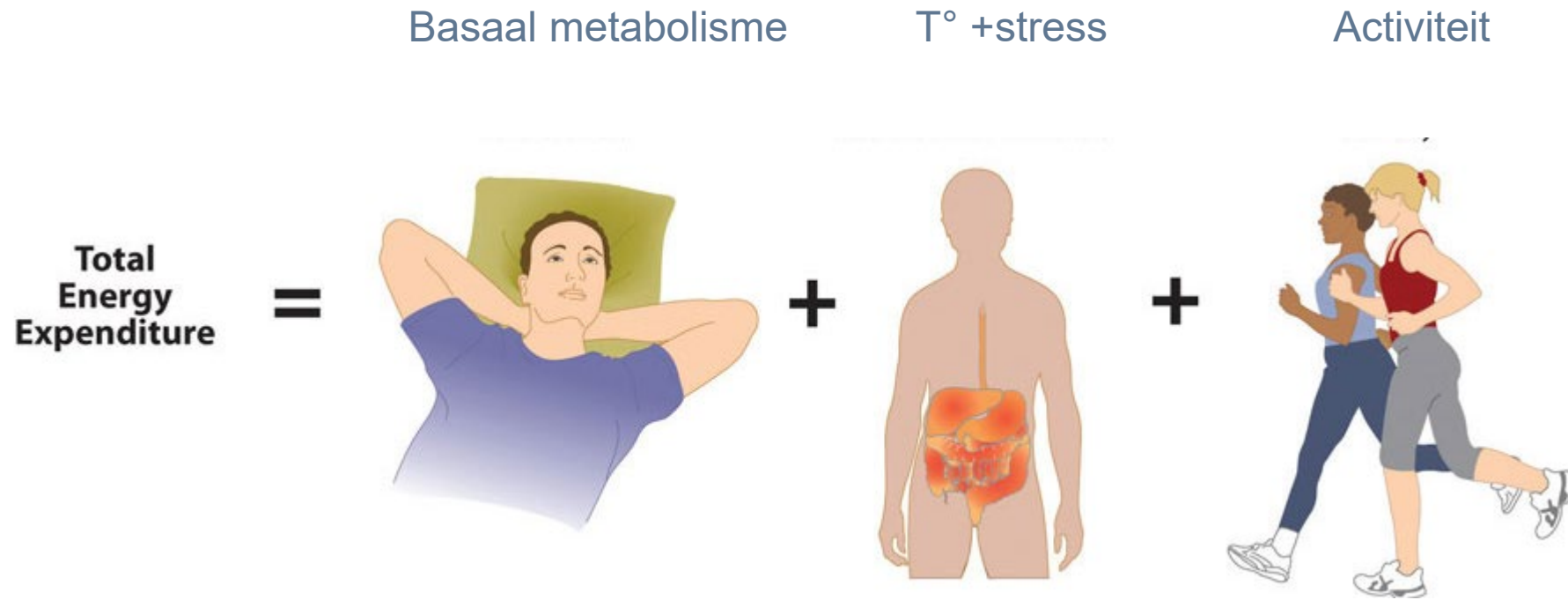
2723 kCal/day

Error: +/- 0.2 %

\* Other researchers' experiments: Error = +/- 1%

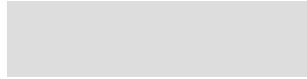
*Science demonstrated that direct calorimetry is equivalent to indirect calorimetry*





# Nutritional intervention

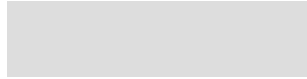
1. Determine nutritional needs phase 1
2. Counselling for problem phase 2
  - Preferences
  - Chewing problems
  - ...
3. Enrich oral nutrition phase 3
  - “normal food” enrichments (sugar, cream, butter,..)
  - Pharmaceutical enrichments (Protein powder,..)
4. Add Oral Nutritional Supplement (ONS) to the diet phase 4
5. Enteral or parenteral nutrition phase 5



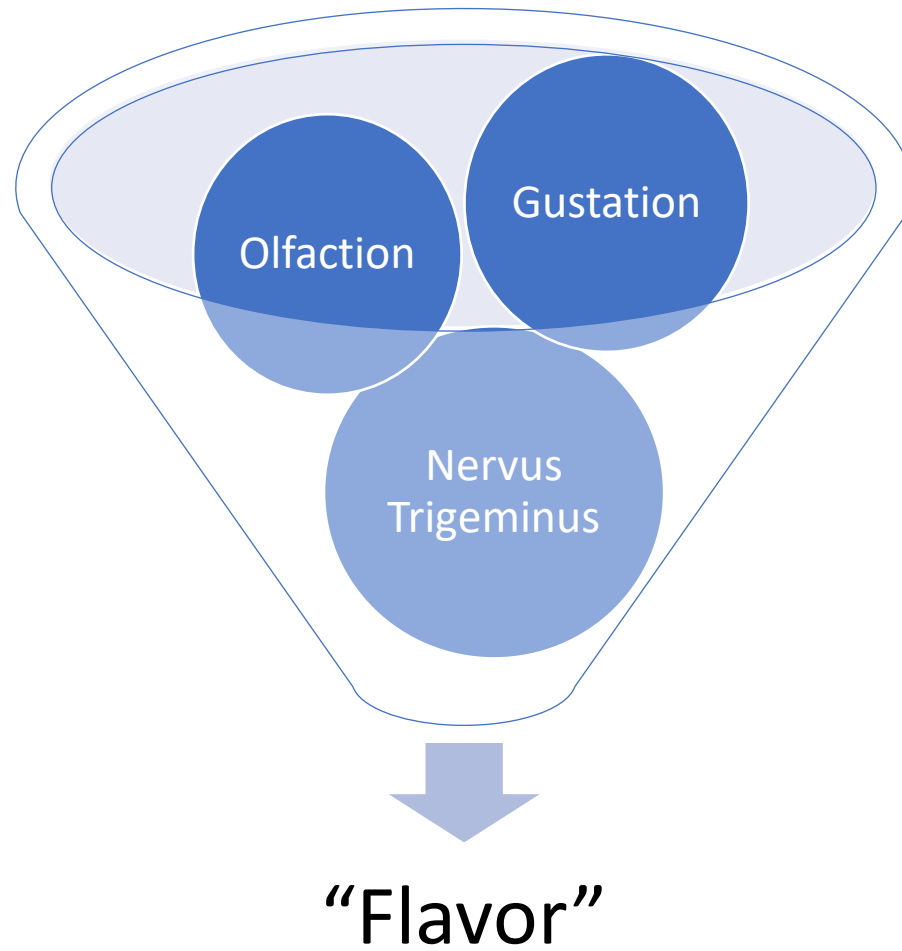


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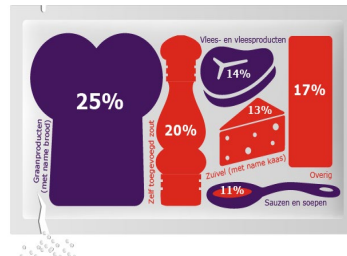




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optimal  
nutritional care  
for all

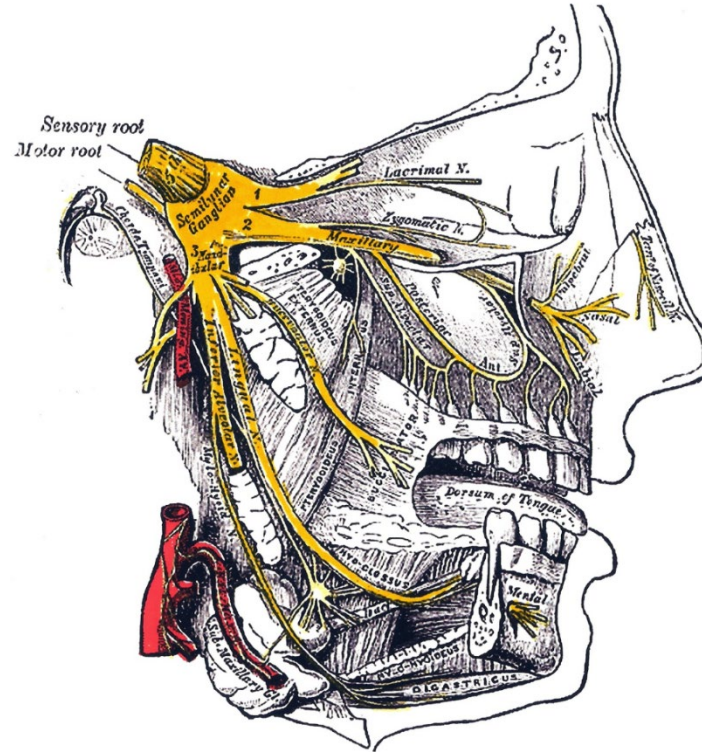
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# Flavor – Trigeminiatie

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# Waarom chilipepers heet zijn en munt koel aanvoelt

**NOBELPRIJS GENEESKUNDE** De Nobelprijs voor Geneeskunde gaat naar onderzoekers die hebben ontrafeld hoe ons zenuwstelsel warmte, koude en aanrakingen oppikt en in elektrische signalen omzet. Een fundamentele ontdekking over hoe we onze omgeving waarnemen.

Nee, de Nobelprijs voor Geneeskunde gaat dit jaar niet naar de ontwikkelaars van de mRNA-vaccins, de technologie waarop de coronavaccins van Pfizer en Moderna zijn gebaseerd en die hét toonbeeld zijn van wat medisch onderzoek kan betekenen voor de mensheid. Er wordt dit jaar ook geen andere ontdekking bekroond waarmee levens worden gered. De Nobelprijs voor Geneeskunde gaat veeleer naar het fundamentele begrip van hoe ons lichaam werkt en hoe we onze omgeving waarnemen. Een ontdekking die zonder twijfel baanbrekend is, maar die tot dusver geen brede medische toepassing heeft.

David Julius (professor aan de University of California) en Ardem Patapoutian (professor aan The Scripps Research Institute, California) werden bekroond voor hun onderzoek naar hoe ons zenuwstelsel signalen van warmte, koude en aanraking (druk) oppikt. De onderzoekers hebben achterhaald wat er op het moleculaire niveau aan de zenuwuiteinden op de huid gebeurt als we bijvoorbeeld een warme kop koffie aanraken of een sneeuwbal vormen; welke receptoren worden geprikkeld en hoe zet-

ten die receptoren de prikkel om in een elektrisch signaal dat naar de hersenen wordt gestuurd?

## Te heet!

'Op de ontdekkingen van Julius en Patapoutian is een heel volgebied gebaseerd', zegt Thomas Voets, die als professor aan de de KU Leuven en de Leuvense tak van het Vlaams Instituut voor Biotechnologie (VIB) zelf onderzoek verricht naar dit soort receptoren. 'Het werd al lang vermoed dat er receptoren bestaan waarmee we warmte, koude en druk waarnemen. De grote verdienste van de twee onderzoekers is dat ze er als eersten in slaagden om de specifieke receptoren van dit soort prikkels op moleculair niveau te identificeren.'

Bij de ontdekking van de receptor die hitte oppikt, eind jaren 1990, kwam er een bijzondere stof aan te pas: capsaïcine. Dat is de stof die chilipepers pikant maakt en ons een (pijnlijk) heet gevoel in de mond bezorgt. Aan de University of California identificeerden Julius en zijn collega's een gen waarmee ze in het labo cellen gevoelig konden maken voor capsaïcine. Dat gen, bleek bij verder onderzoek, bevat de code voor de capsaïcine-

receptor. Ze doopten hem 'TRPV1'. Bij verder onderzoek bleek TRPV1 niet alleen op capsaïcine te reageren, maar ook op hitte. Een pikante chilipeper en kokend hete thee activeren dus dezelfde receptor, namelijk degenen die hoge temperaturen opmerkt en doorseint naar de hersenen. Het signaal is twee keer hetzelfde: te heet!

Na de ontdekking van TRPV1 gingen David Julius en Ardem Patapoutian (onafhankelijk van elkaar) aan de slag met een andere stof, die ons een gevoel van koude in de mond geeft: menthol, de stof van muntsmaak. De onderzoekers

**'Pijnstillers ontwikkelen die inwerken op receptoren die een rol spelen bij het ontstaan van pijn is allesbehalve makkelijk'**

Thomas Voets  
Professor KU Leuven

vonden TRPM8, een receptor die geactiveerd wordt door menthol en bij temperaturen lager dan lichaamstemperatuur.

'Voor verschillende temperaturen hebben we verschillende receptoren, elk met hun eigen temperatuurgevoeligheid', zegt Voets.

## Druk op blaas

Patapoutian onderzocht later ook hoe mechanische prikkels, aanrakingen dus, omgezet worden in elektrische signalen. Samen met zijn collega's pookte hij met micropipetten op cellen, die daarop reageerden door een elektrisch signaal uit te zenden. Vervolgens zochten ze het gen dat voor die reactie van de cellen verantwoordelijk is. De vorschers vonden twee genen die elk coderen voor één receptor. Die receptoren werden geactiveerd als het celmembraan druk ervaart. Ze kregen de naam 'Piezo1' en 'Piezo2' (naar *piezo*, het Griekse woord voor druk).

'De druksensoren zijn niet alleen belangrijk voor onze tastzin', zegt Voets. 'Ze spelen ook een rol bij het signaal dat de blaas volzit, bijvoorbeeld, of bij de regulering van de bloeddruk'.  
Meerdere farmabedrijven pro-



Ardem Patapoutian (links) en David Julius. © Reuters

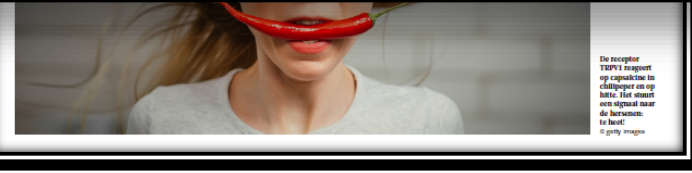
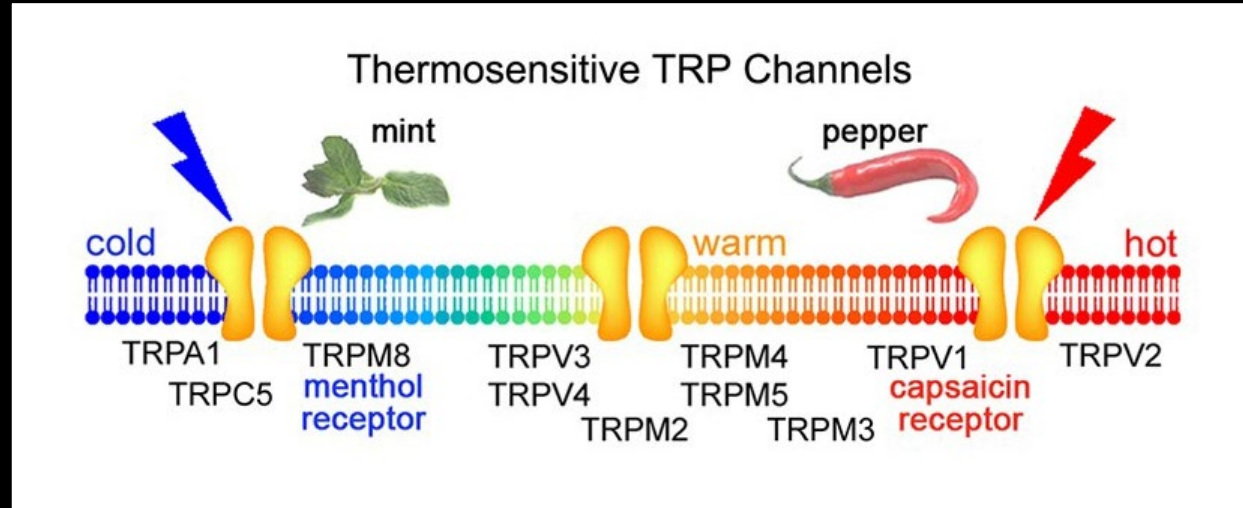
beren de ontdekkingen van Julius en Patapoutian en het onderzoek dat daarop gevolgd is te verzilveren. 'Denk aan pijnstillers die inwerken op receptoren die een rol spelen bij het ontstaan van pijn', aldus Voets. 'Maar dat blijkt allesbehalve makkelijk. Bij studies met medicijnen die ingrijpen op de receptoren voor temperatuur, bijvoorbeeld, raakt de lichaamstemperatuur makkelijk ontregeld. Koorts is een bijwerking. Dus een toepassing van deze ontdekkingen vinden we nog niet bij de apotheker. Wat niet wegneemt dat ze de Nobelprijs waard zijn.'

Maxie Eckert



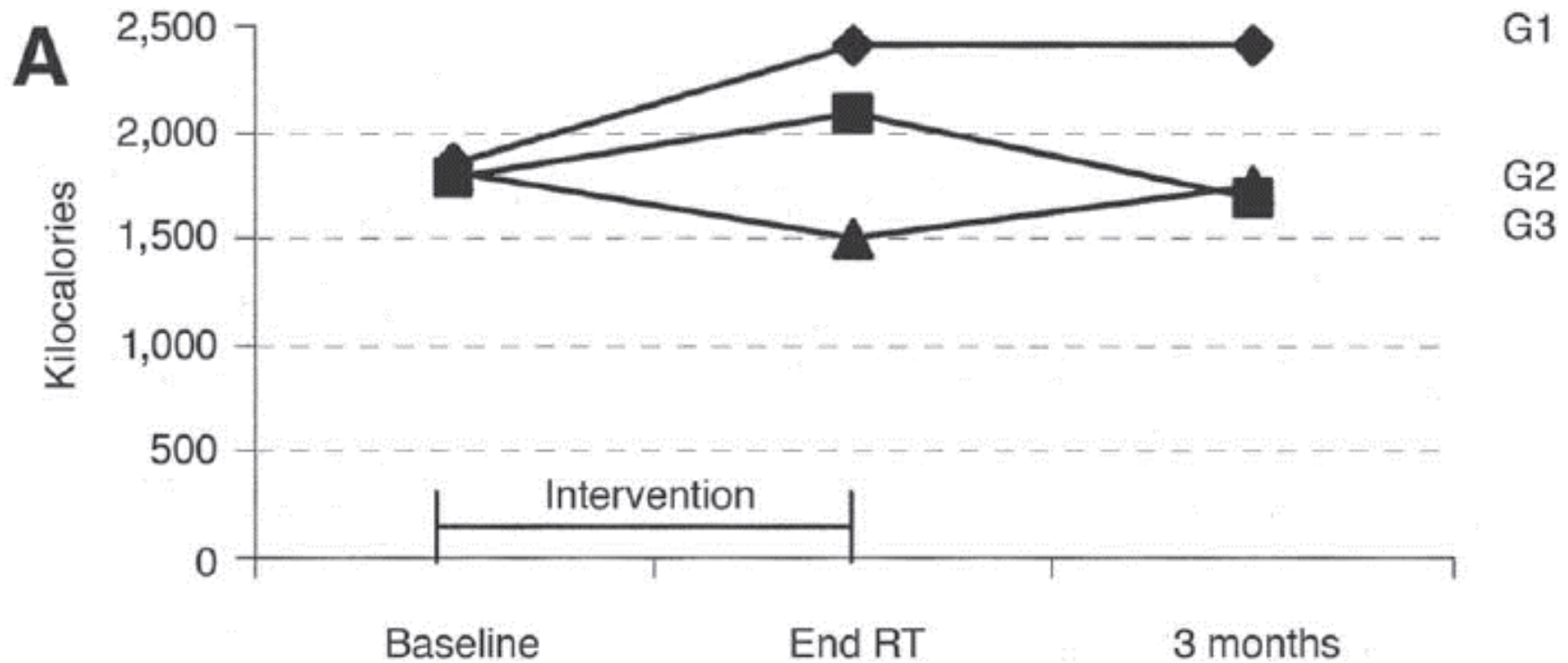
De receptor TRPV1 reageert op capsaïcine in chilipeper en op hitte. Het stuurt ons signaal naar de hersenen: te heet!  
© Getty Images

# Waarom chilipepers heet



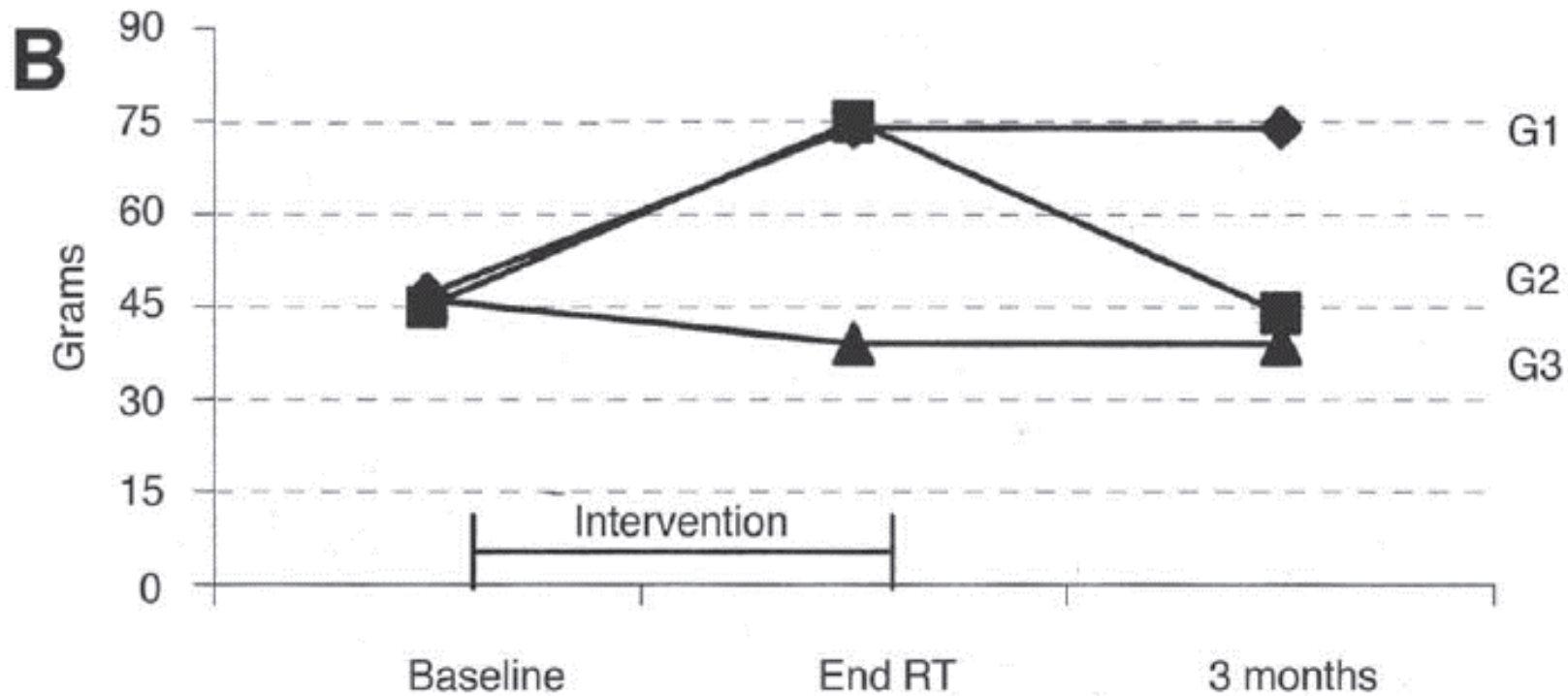
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- G1: dietary counseling based on regular foods;
- G2: supplements;
- G3, ad libitum intake.

*Dietary Counseling Improves Patient Outcomes: A Prospective, Randomized, Controlled Trial in Colorectal Cancer Patients Undergoing Radiotherapy Ravasco et al.; J Clin Oncol 23:1431-1438.*



- G1: dietary counseling based on regular foods;
- G2: supplements;
- G3, ad libitum intake.

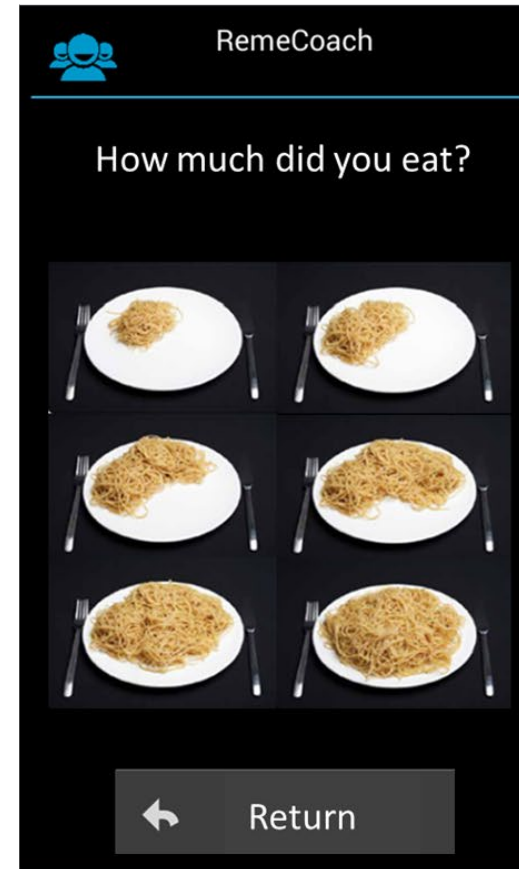
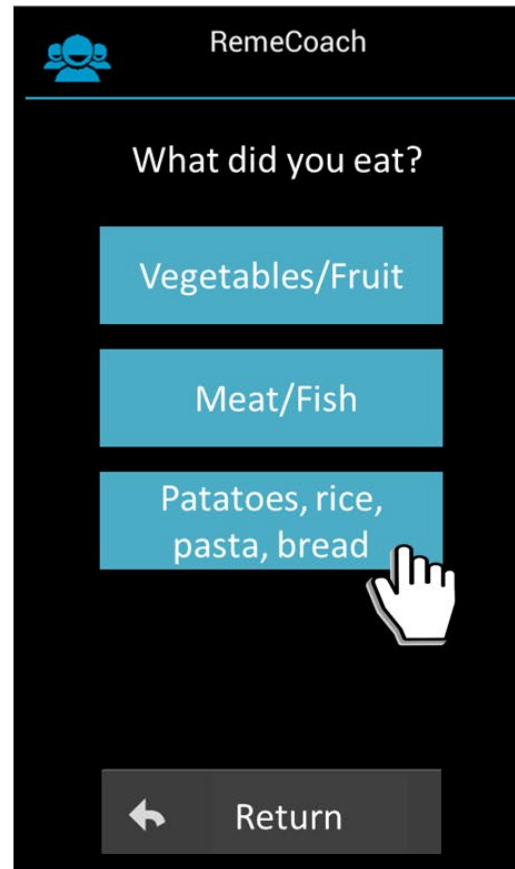
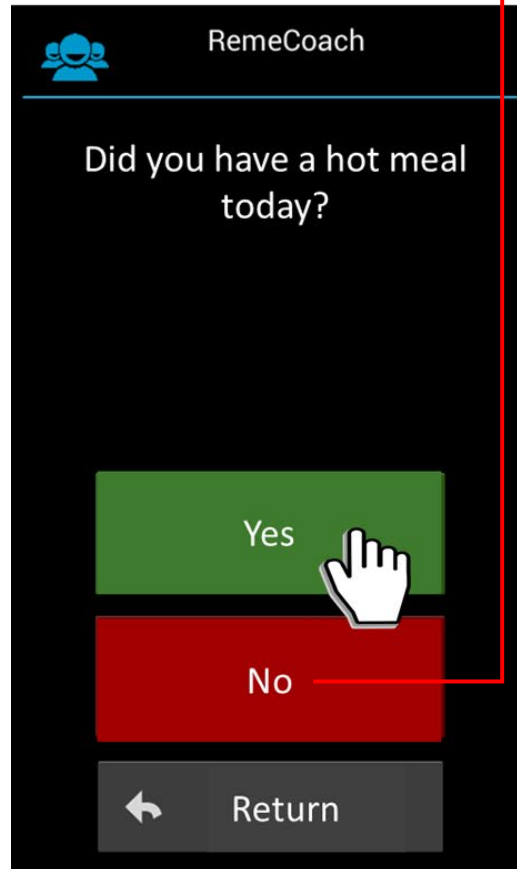
*Dietary Counseling Improves Patient Outcomes: A Prospective, Randomized, Controlled Trial in Colorectal Cancer Patients Undergoing Radiotherapy Ravasco et al.; J Clin Oncol 23:1431-1438.*

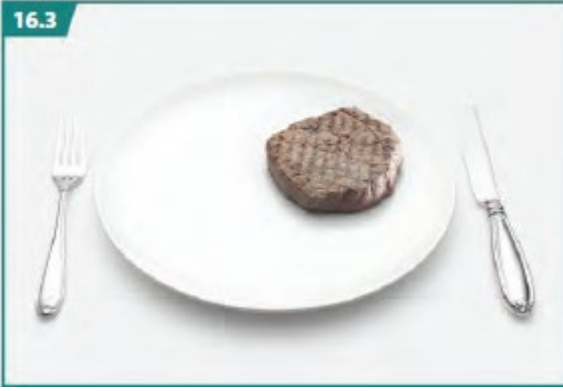
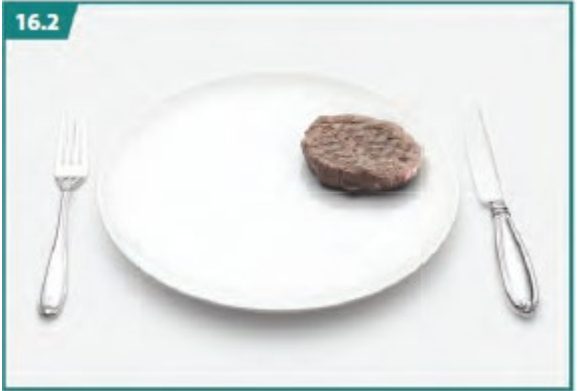


# How to monitor our out patients?

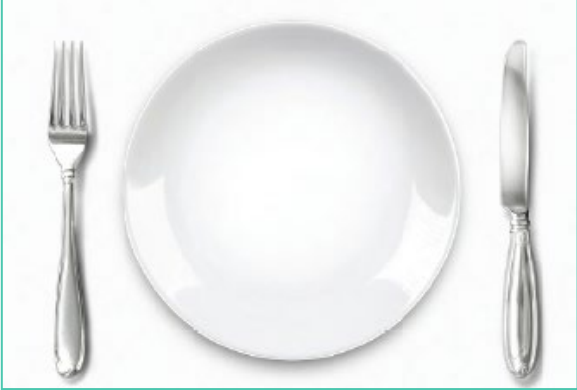
## 1. Hot meal?

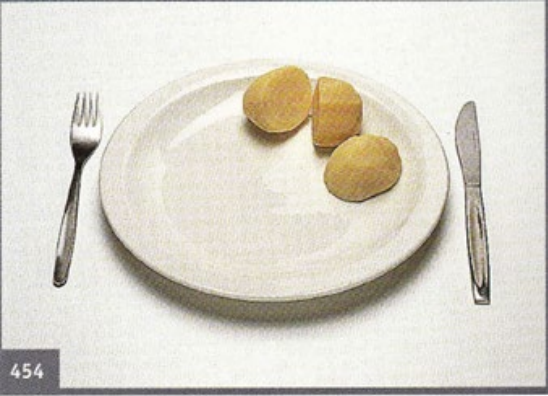
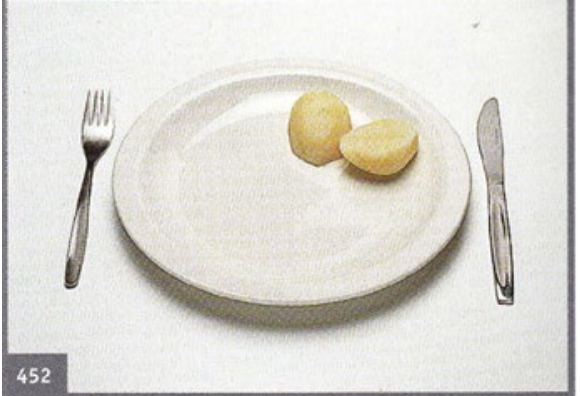
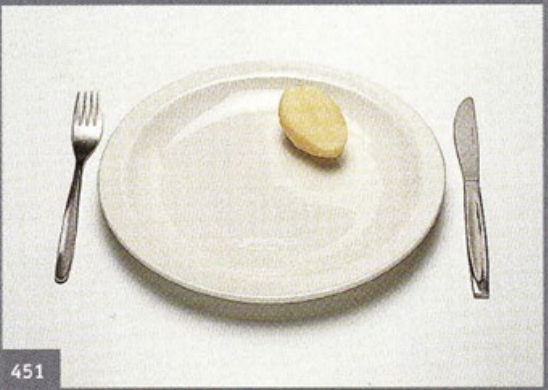
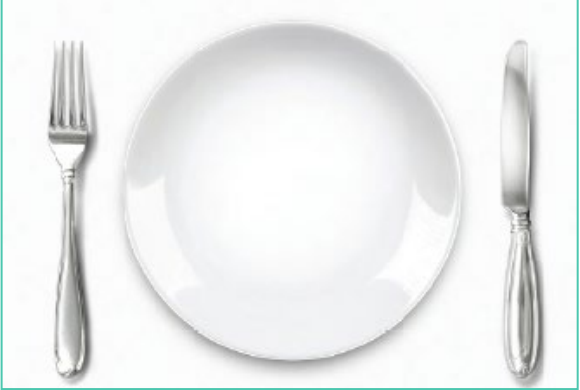
> 4x/week NO -> consult diëtician





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# Use of tube feeding

- Alarm
- Dose
- confirm intake

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The screenshot shows a mobile application interface for recording weight. At the top, there is a status bar with icons for notifications, Bluetooth, Wi-Fi, cellular signal, 97% battery, and the time 08:49. Below the status bar is a dark header with a back arrow on the left, the title "Gewicht" in the center, and a clipboard icon on the right. The main content area has a light background and contains the label "Gewicht" above a text input field. The input field contains the number "65" and a unit selector dropdown menu showing "kg". At the bottom of the screen is a green button with the text "OPSLAAN" and a white checkmark icon.

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📧 📧 📧 ... 96% 08:51

< Braken 📄

Braken

Geen klachten

1 -2 keer per 24u

3-5 keer per 24u

≥ 6 keer in 24u

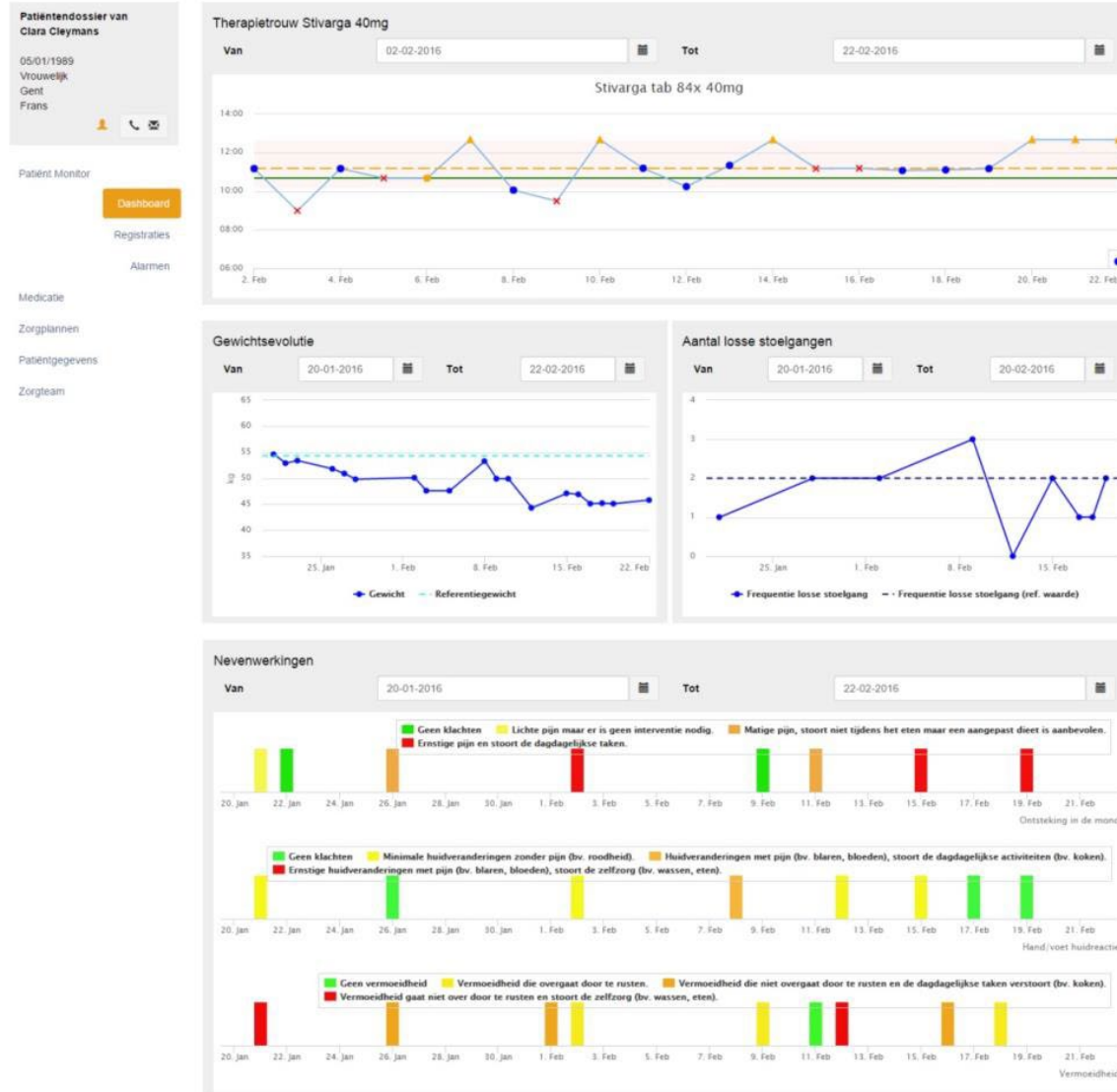
OPSLAAN ✓

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# remeCare database

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# Conclusion

- Nutritional advice in cancer prevention  $\neq$  Nutritional advice during therapy
- Not only weight loss is important to prevent
  - Muscle loss and protein intake are the newbies!
- Focus on diet intervention before starting supplements
- Use modern tools to detect the patient

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