



Quality of Life after CRS and HIPEC

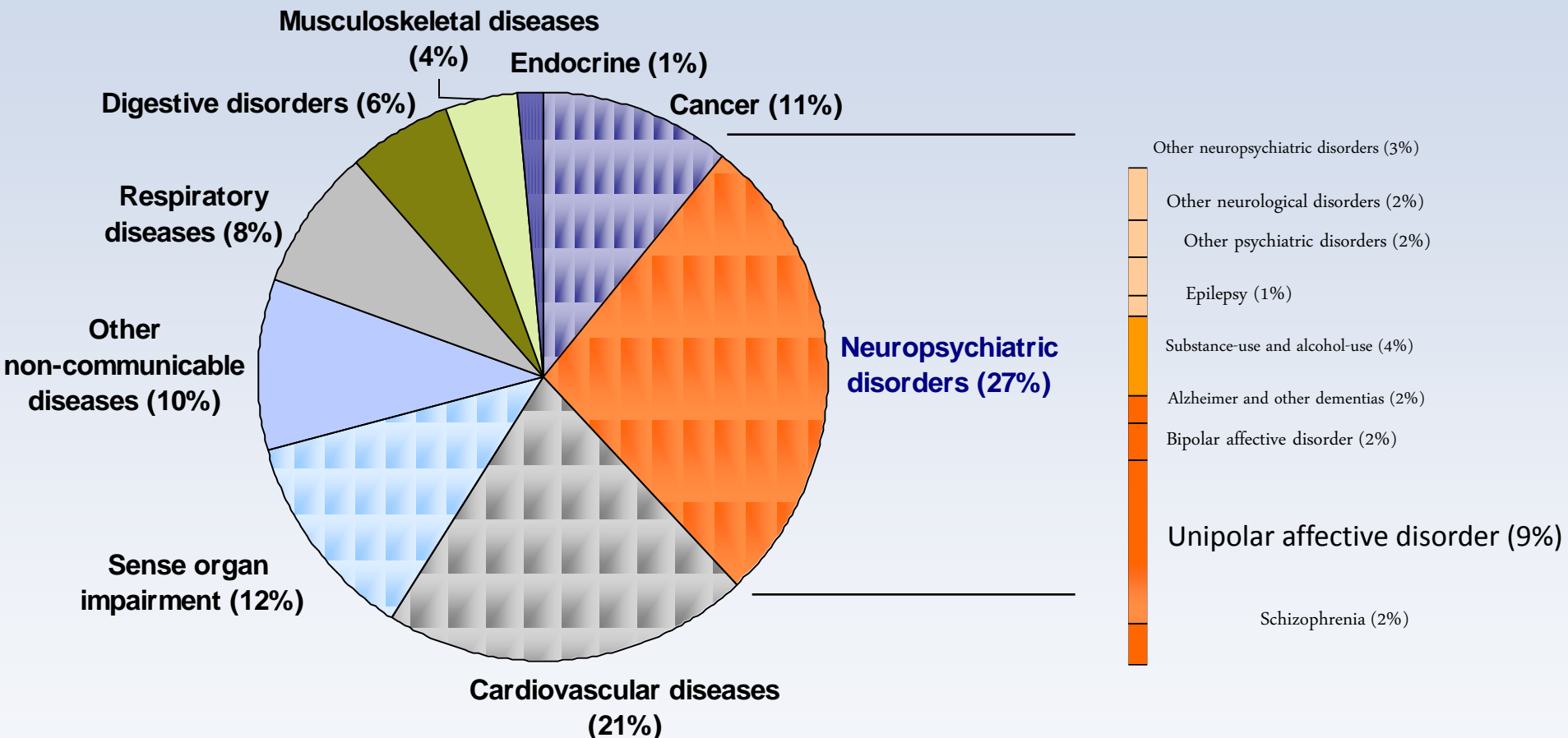
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Charité – Universitätsmedizin Berlin
Head: Univ.-Prof. Dr. med. J. Pratschke



The Global Burden of Diseases

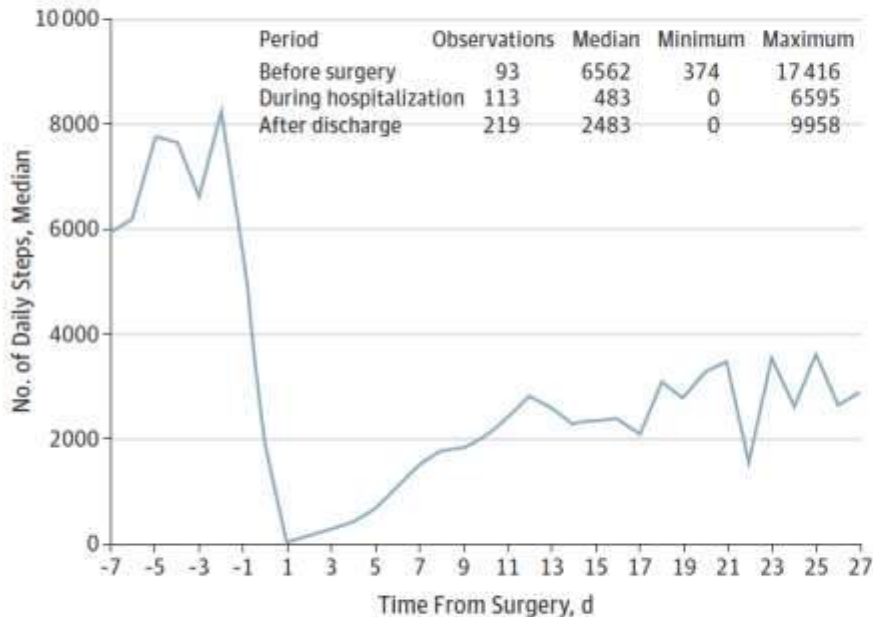
Contributions of non-communicable diseases to disability-adjusted life years



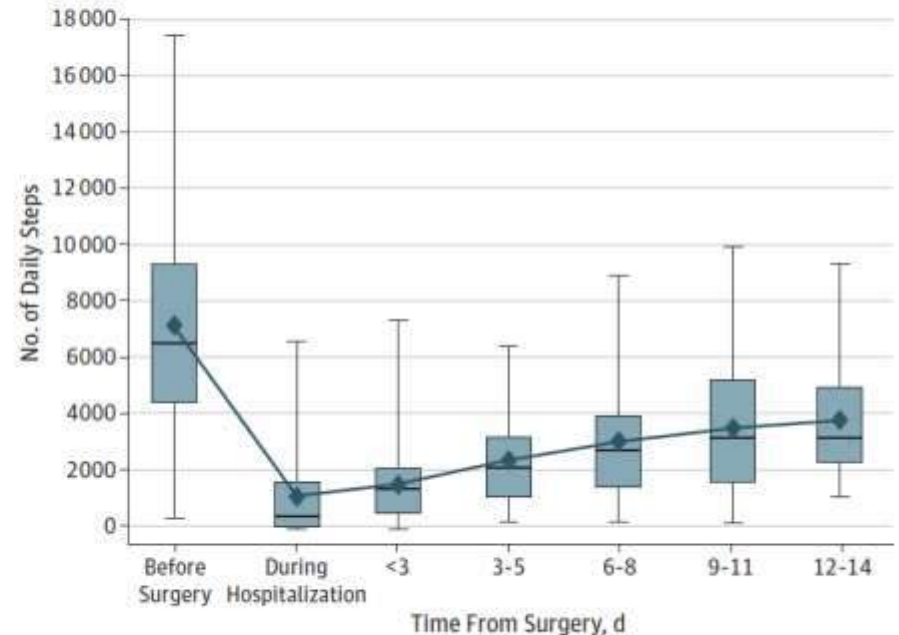
Functional Status before Surgery

Figure 1. Functional Status Trajectory and Trends Before Surgery, During Hospitalization, and Up to 2 Weeks After Discharge

A Daily steps measured using the Vivofit 2 (Garmin Ltd)



B Trends for the distribution of daily steps



The mean (diamond), quartiles, and minimum and maximum observations at each time point are shown in B.

Sun V, *JAMA Surg.* doi:10.1001/jamasurg.2017.1519 (2017)

Problems associated with Cancer

Knowledge of Disease

- Life threatening
- Inadequate information
- Prognosis uncertainty
- Guilt about causality
- Stigma
- Fears of pain
- Fears of undignified death

Coping with treatment

- Mutilating surgery
- Loss of body image
- Loss of self esteem
- Rejection by partner
- Radiotherapy (depression, nausea, lethargy)
- Chemotherapy (Nausea, vomiting, alopecia, mouth ulcers, leucopenia, cardio toxicity, hirsutism, hot flushes)

Lorraine Sherr, 2013 with courtesy from Prof. Okasha

The Patient: Universal Patient Fears

(in newly diagnosed patients); “6 D’s”

- 1. death**
- 2. dependency (on family/spouse)**
- 3. disfigurement**
- 4. disability**
- 5. disruption (e.g. relationships)**
- 6. discomfort (pain)**

Lorraine Sherr, 2013 with courtesy from Prof. Okasha

QoL - Best Predictor of Prognosis

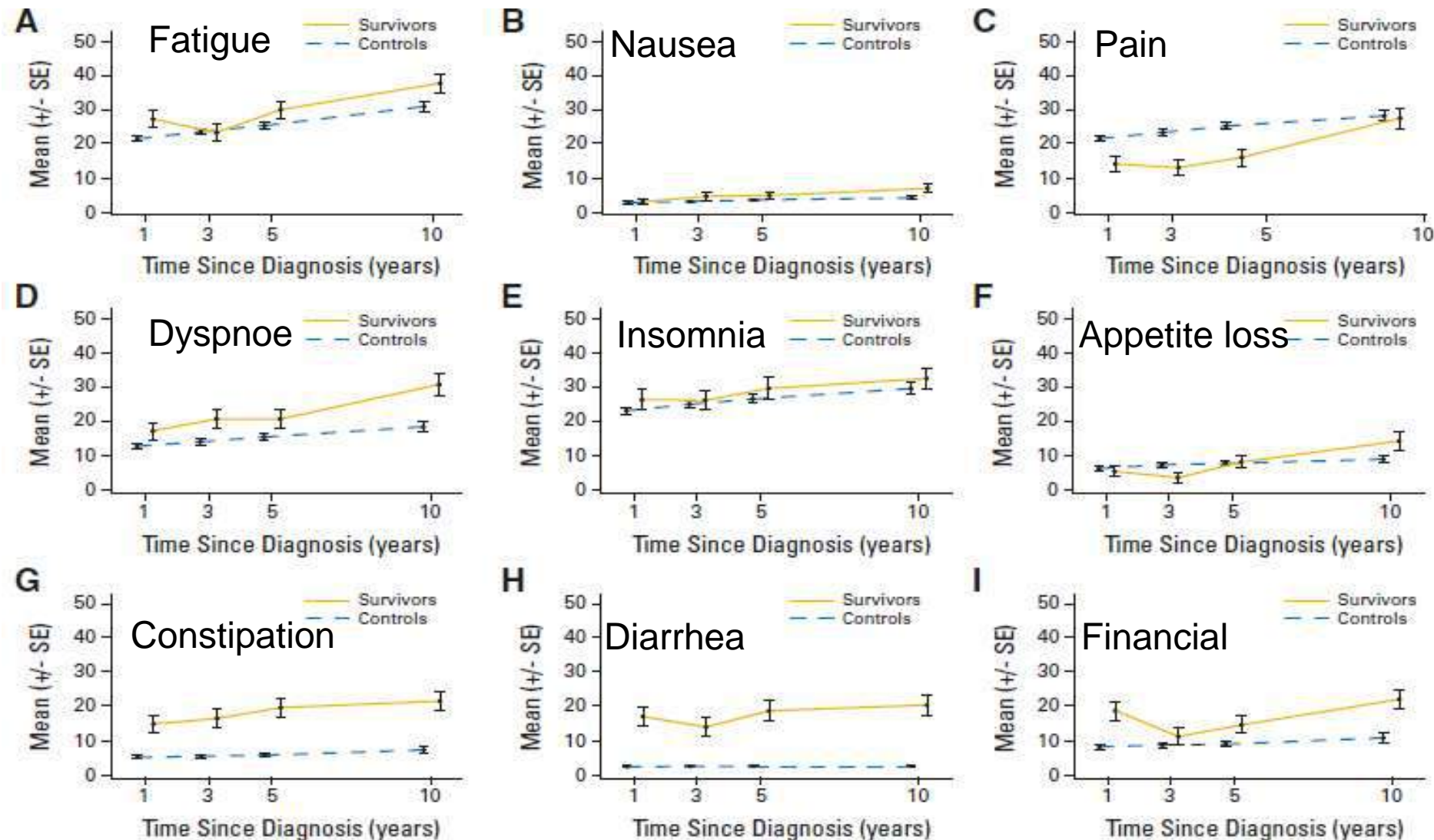
Core Domains	Typical Items
Psychological	Depression, Anxiety, Adjustment to illness
Social	Personal relationships, sexual interest, social & leisure activities
Occupational	Employment, household coping
Physical	Pain, mobility, sleep, sexual functioning

Note order of domains; doctors tend to emphasize physical

Lorraine Sherr, 2013 with courtesy from Prof. Okasha

QoL Symptoms for CRC

N=178/234

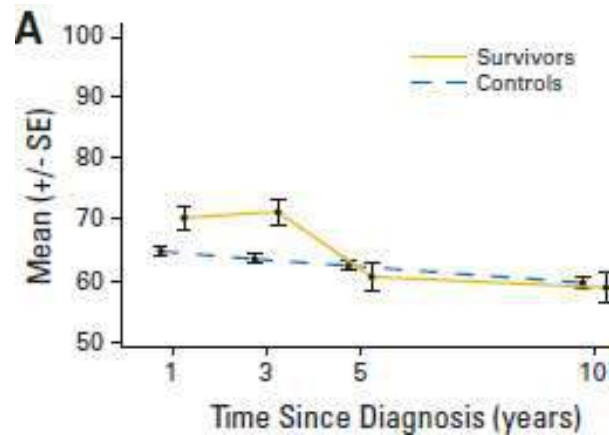


Jansen L, *J Clin Oncol* 29:3263 (2011)

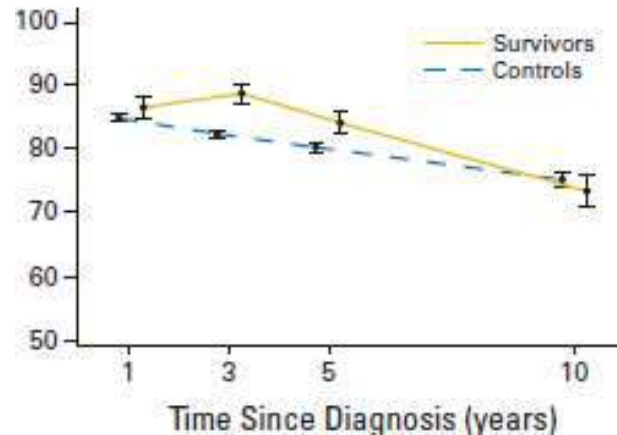
QoL Functioning for CRC

N=178/234

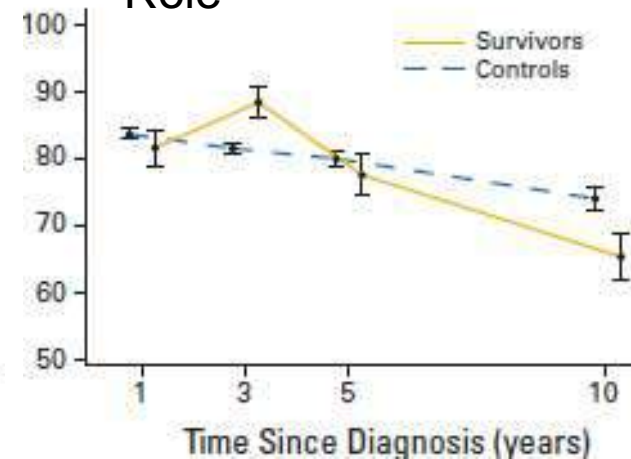
Global QoL



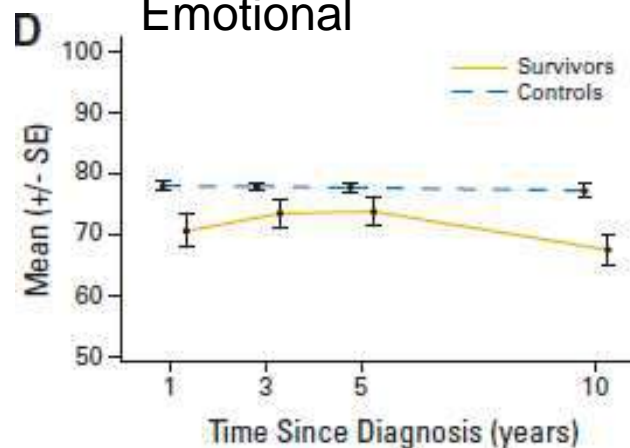
Physical



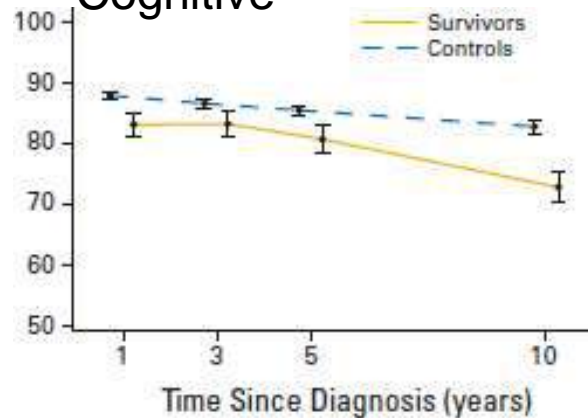
Role



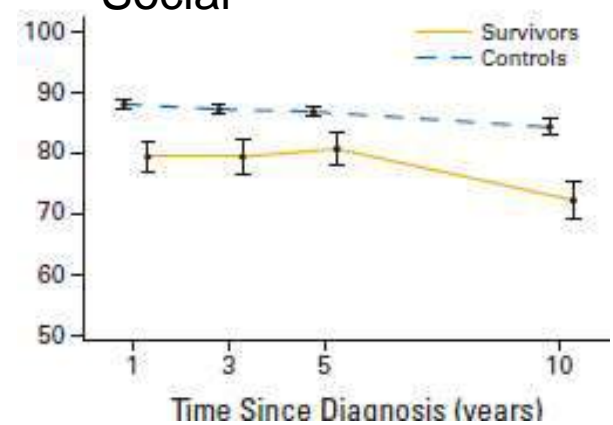
Emotional



Cognitive



Social



Jansen L, *J Clin Oncol* 29:3263 (2011)

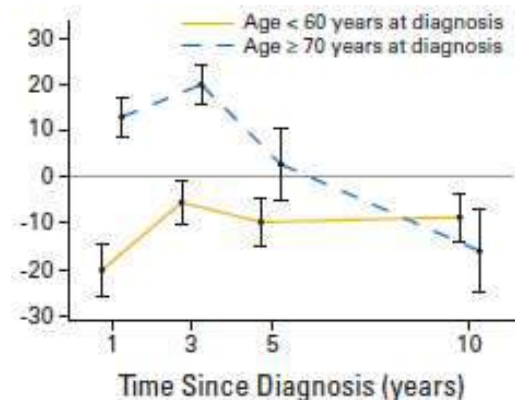
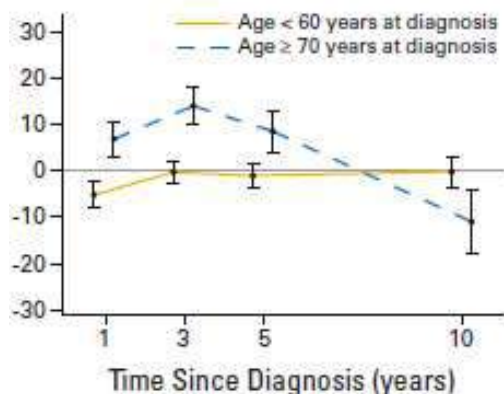
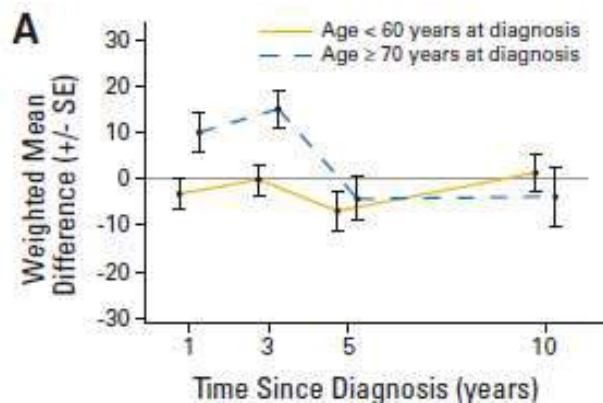
QoL Functioning Depending on Age CRC

N=178/234

Global QoL

Physical

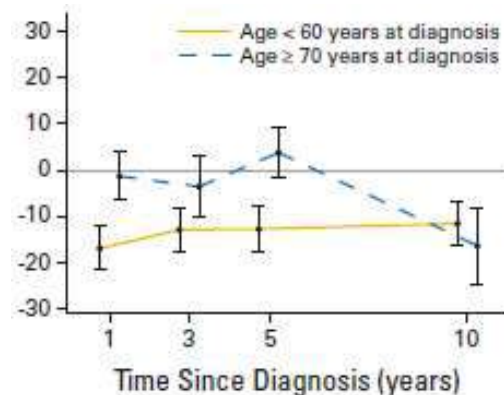
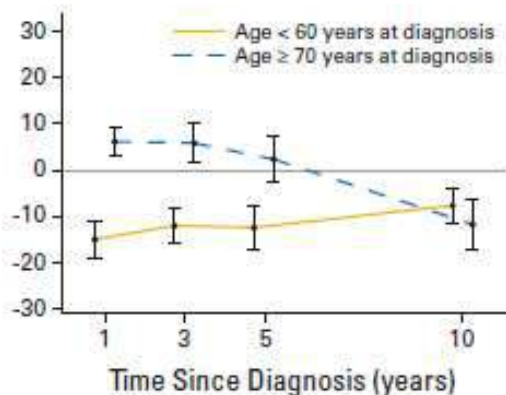
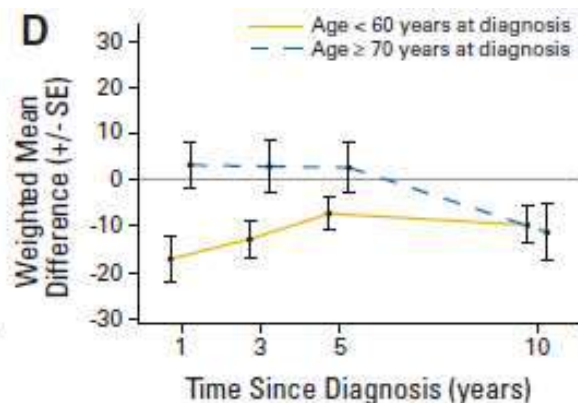
Role



Emotional

Cognitive

Social



Jansen L, *J Clin Oncol* 29:3263 (2011)

Long-term QoL of CRC survivors

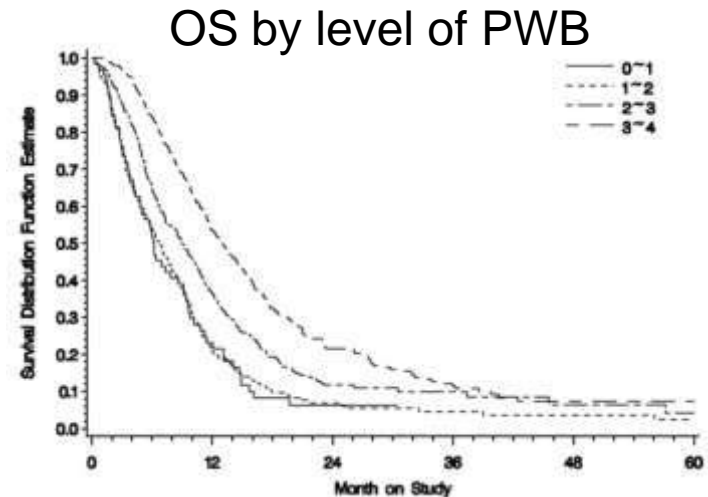
- Results show that colorectal cancer survivors do not recover from the sequelae of colorectal cancer in the long run
- The development of QoL depends on age at diagnosis
- Younger survivors have continuously substantial deficits in role, cognitive, emotional, and social functioning and specific problems like bowel problems, fatigue, and insomnia
- Older survivors have comparable to better QoL in the first years after diagnosis but show detriments in QoL after 10 years

Jansen L, *J Clin Oncol* 29:3263 (2011)

QoL and OS in advanced cervical cancer

Functional Assessment of Cancer Therapy for patients with cervical cancer (FACT-Cx) with 5 domains:

- physical well being (PWB)
- emotional (EWB)
- social (SWB)
- functional well being (FWB)
- cervix cancer subscale (CCS)



Subscale: physical well being (PWB)

- Predict survival in advanced cervical cancer - acknowledging this as a more sensitive measure than toxicity scales or performance status
- Clinical indicator of problems which are amenable to supportive care interventions
- Less subject to physician bias than performance status

Chase DM, Gynecologic Oncology 125:315 (2012)

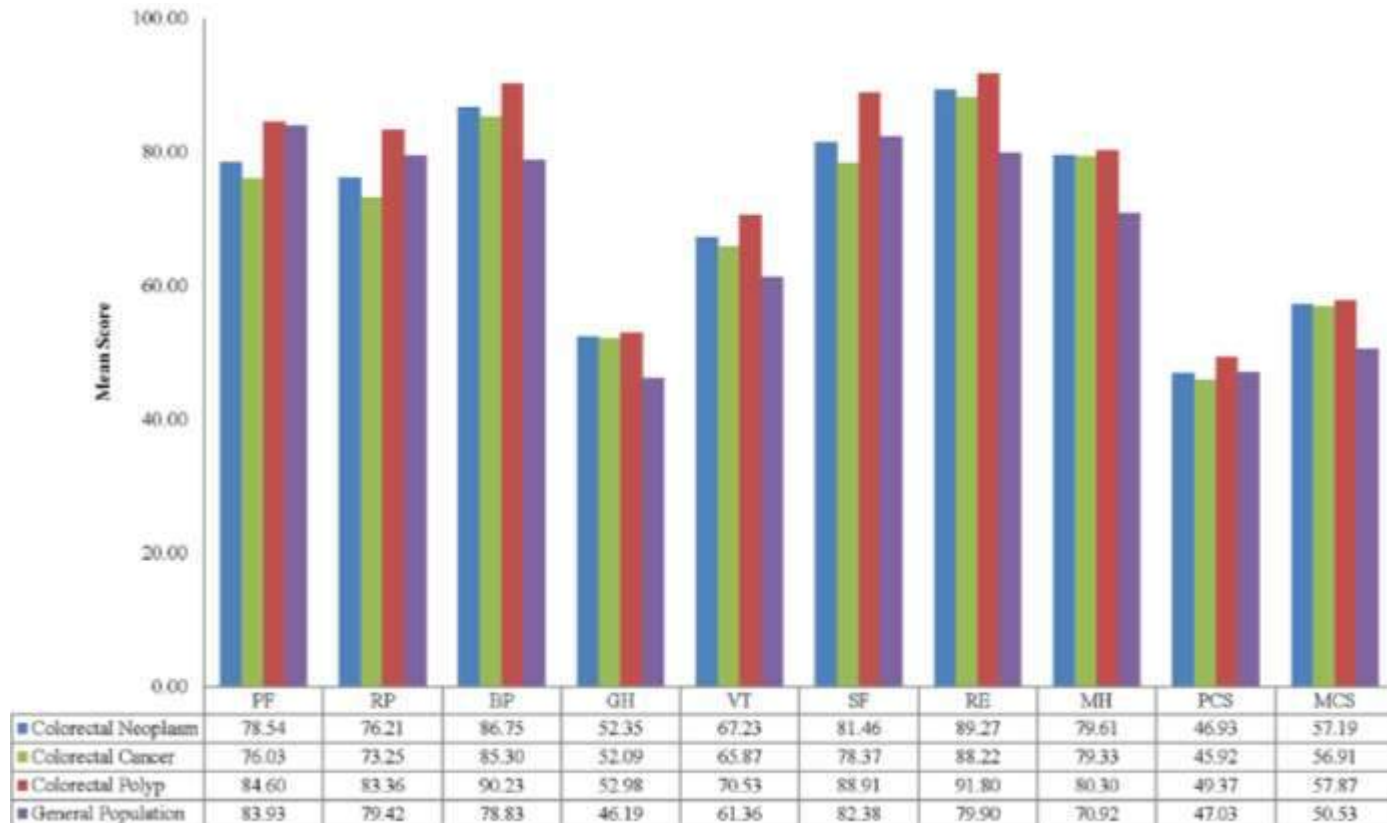
Impact of Chemotherapy Stop: mCRC

Continuous chemotherapy administered until disease progression compared with complete treatment stop did not have a detrimental impact on the OS of patients with mCRC – but impact of QoL

Trial	Arm	Neurpa- thy	H&F Syndrom	Muco- sitis	Diarrhea	Vomiting	Thrombo- penia	Neutro- penia	Anemia
Maughan 2003	Stop	-	2 %	-	6 %	7 %	1 %	4 %	1 %
	continuous	-	4 %	-	10 %	5 %	1 %	2 %	5 %
OPTIMOX2	Stop	5 %	0 %	2 %	4 %	4 %	4 %	12 %	0 %
	continuous	3 %	0 %	1 %	3 %	1 %	8 %	21 %	0 %
MRCCOIN	Stop	5 %	3 %	1 %	10 %	4 %	3 %	8 %	3 %
	continuous	27 %	5 %	1 %	8 %	2 %	1 %	12 %	1 %

Pereira AA, *Acta Oncologica* 54: 1737 (2015)

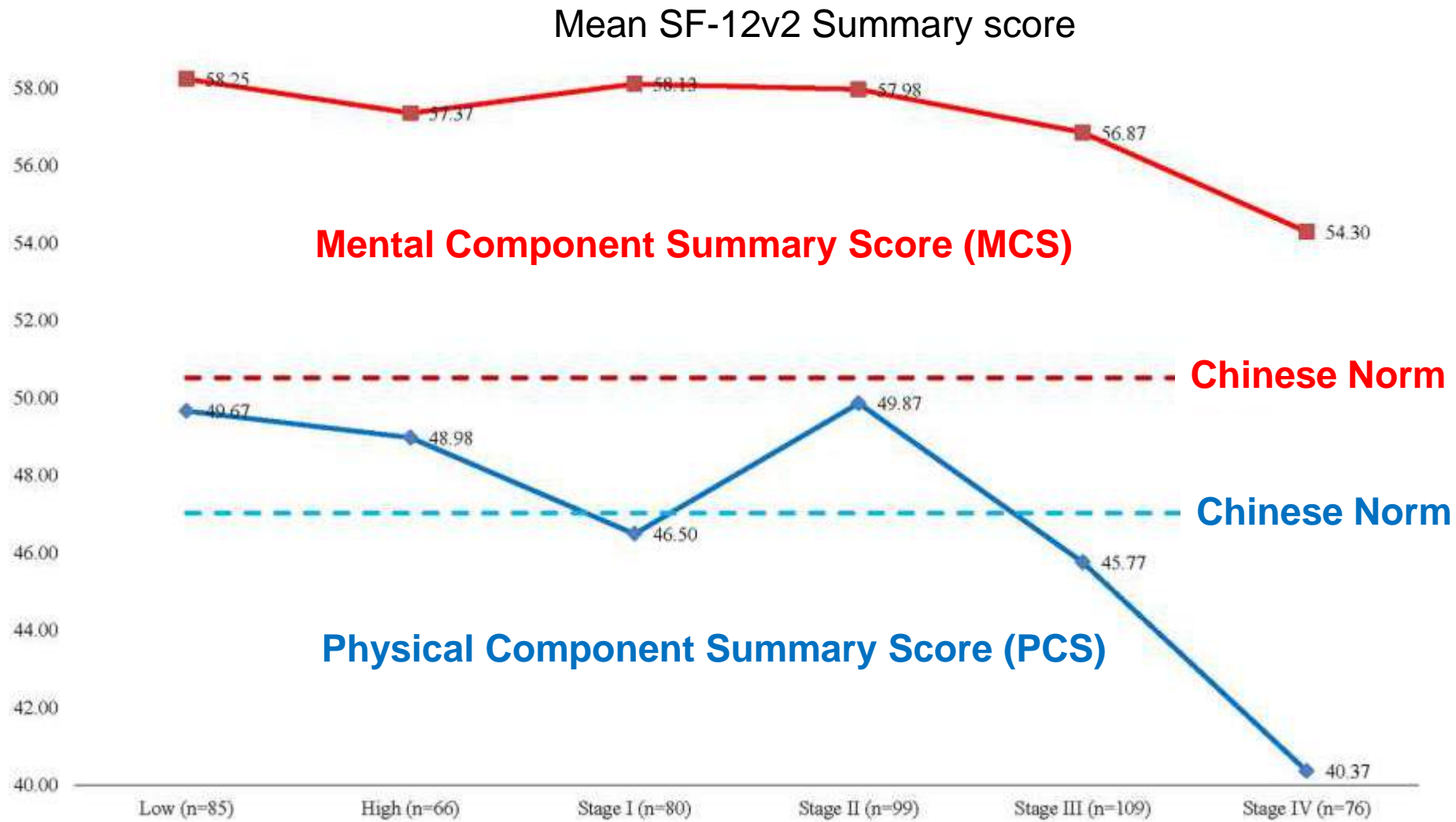
QoL: Colorectal neoplasm & population



- Assessment of the HRQoL of patients with different stages of CRN compared to normal population
- Short-Form 12-Item (SF-12) and 6-dimensions (SF-6D) Health Survey
- Relation to clinical factors to the HRQOL of patient

Wong CH, PLOS ONE ;3:e58341 (2013)

QoL: Colorectal neoplasm & population



Wong CH, PLOS ONE ;3:e58341 (2013)

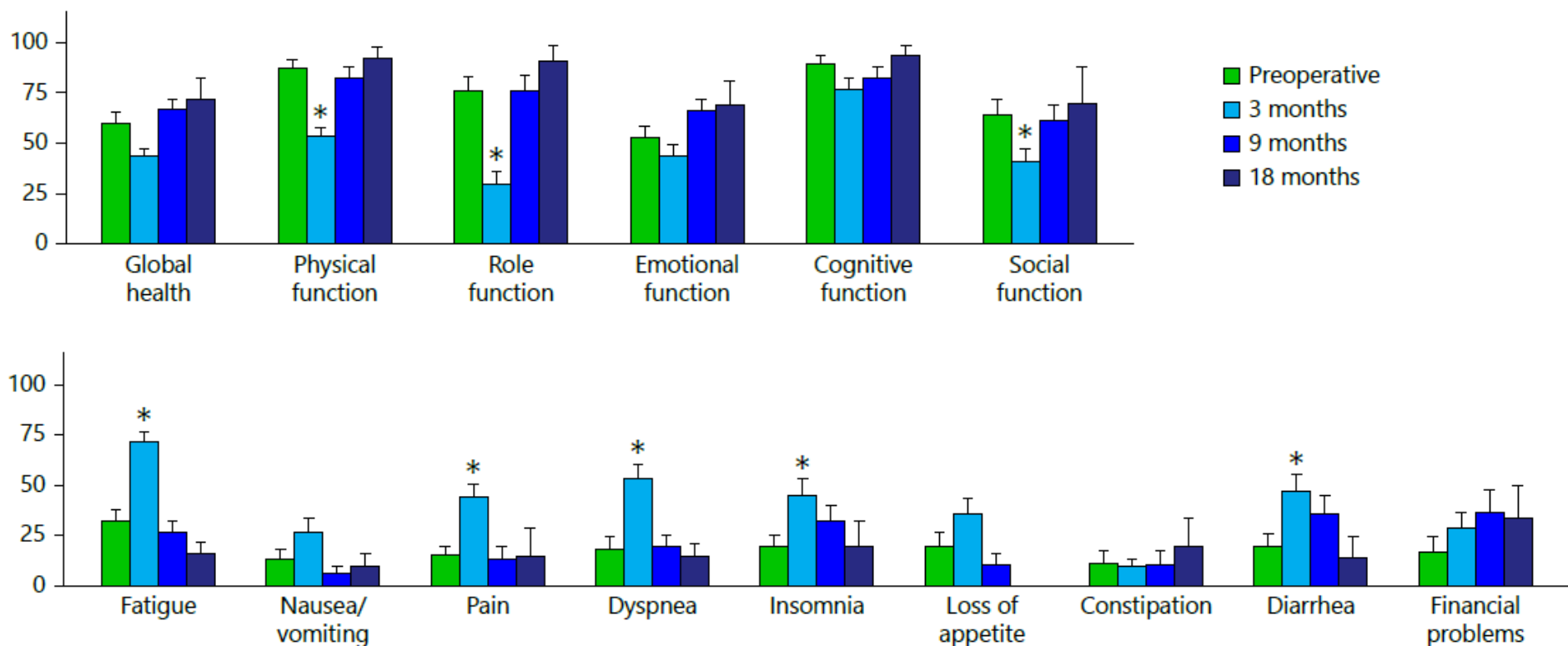
QoL: CRS & HIPEC compared with disease free cancer Patients

QOL parameter	Mean score of study population (95 % confidence interval)	Reference value	p value
<i>Function score</i>			
Global health	67 (59–75)	71	0.335
Physical functioning	85 (78–91)	85	0.908
Role functioning	89 (83–96)	87	0.487
Emotional functioning	83 (76–89)	81	0.567
Cognitive functioning	88 (83–94)	81	0.014*
Social functioning	83 (74–93)	86	0.567
<i>Symptom score</i>			
Fatigue	17 (10–25)	25	0.040*
Nausea and vomiting	7 (1–13)	4	0.308
Pain	13 (5–21)	18	0.204
Dyspnea	8 (2–15)	15	0.051
Insomnia	16 (6–25)	24	0.052
Appetite loss	7 (1–14)	11	0.230
Constipation	12 (4–20)	11	0.820
Diarrhea	7 (1–14)	6	0.720
Financial difficulties	21 (10–33)	23	0.776

Tan WJ, Ann Surg Oncol 20:4219(2013)

QoL after CRS and HIPEC

40 patients (65% females) with different primary tumors, the EORTC QLQ-C30 questionnaire was applied prior to CS and HIPEC as well as 3, 9, and 18 months



Albertsmeier M, Dig Surg ;31:334 (2014)

QoL after CRS & HIPEC n=598

- Prospective trial n= 598 patients
 - Short form 36 item health survey (**SF 36**)
 - functional assessment of cancer therapy +colon subscale (**FACT-C**)
 - Brief pain inventory (**BPI**)
 - Center for depression scale (**CDS**)
 - Eastern cooperative oncology group (**ECOG**) performance status
- at 3,6,12,24 months
 - Although HIPEC is associated with morbidity and detriments to QoL
 - Recovery with good overall QoL typically occurs at or before 6 months.
 - Baseline QoL is associated with morbidity, mortality, and survival after HIPEC (higher BPI, worst pain, ECOG)

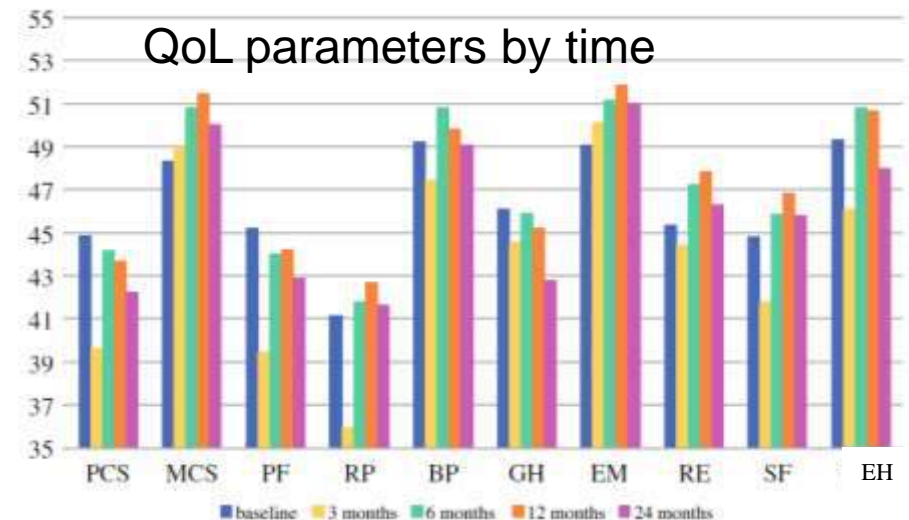
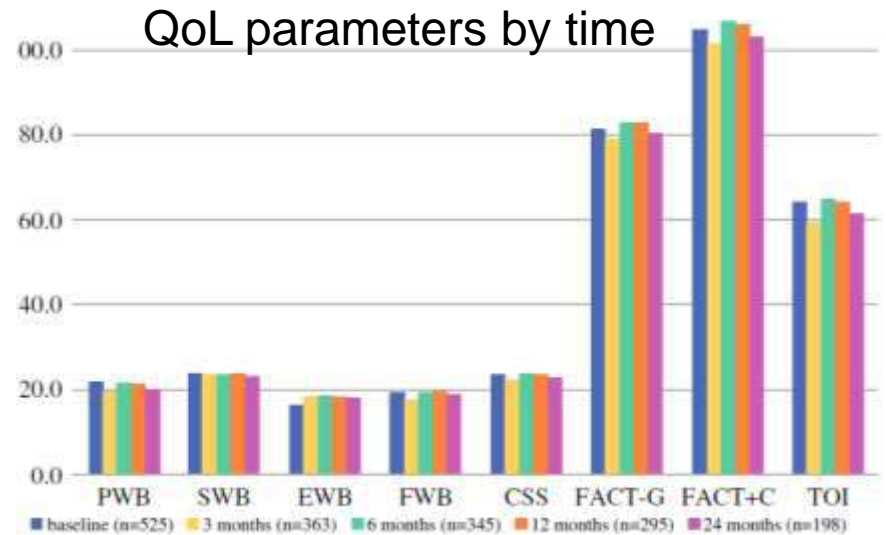
Dodson R, Ann Surg Oncol 23:S772 (2016)

QoL after CRS & HIPEC n=598

Physical well being (PWB)
Social (SWB)
Emotional (EWB)
Functional (FWB)
Trial outcome index (TOI)

Physical Component Scales (PCS)
Mental Component Summary (MCS)
Physical functioning (PF)
Role physical (RP)
Bodily pain (BP)
General health (GH)
Role emotional (RE)
Social functioning (SF)
Emotional health (EH)
Mental health (MH)

Higher scores indicate better function, with either less psychological stress or functional limitations

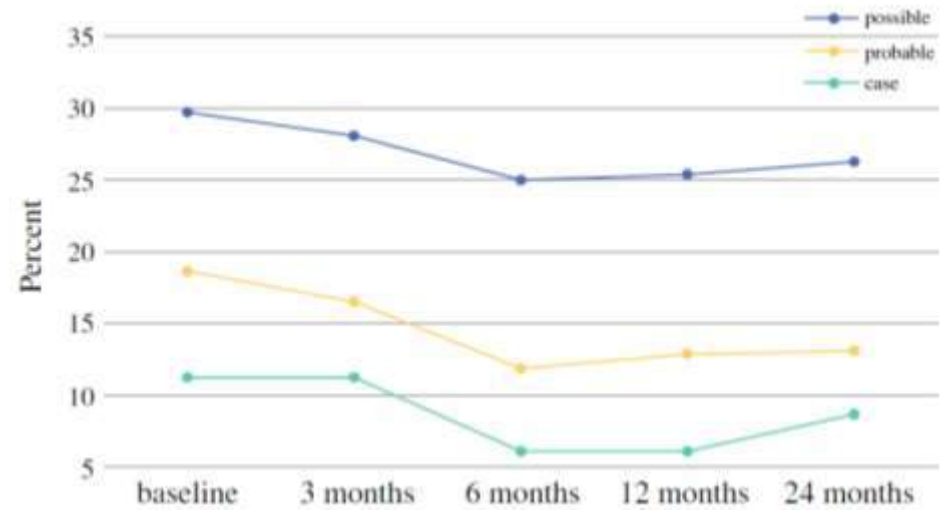


Dodson R, Ann Surg Oncol 23:S772 (2016)

QoL after CRS & HIPEC n=598

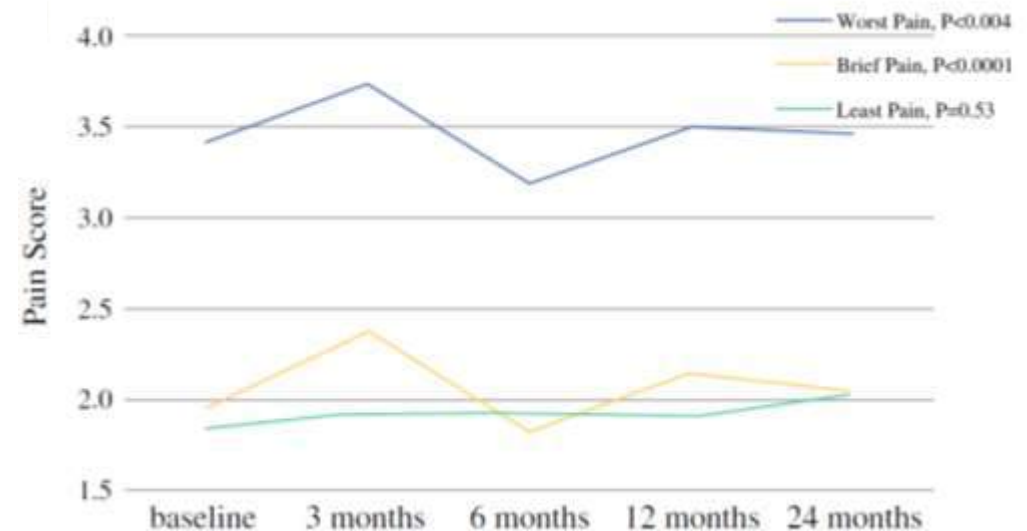
Depression Score (CES-D)

- 30 % had CES-D score of ≥ 16
- Depression decreased over time
- Baseline CES-D was 12.7
- Increased slightly at 3 months
- **Improvement above baseline at 6 & 12 months ($p = 0.001$)**
- By 24 months, CES-D scores had returned to baseline.



Pain Assessment

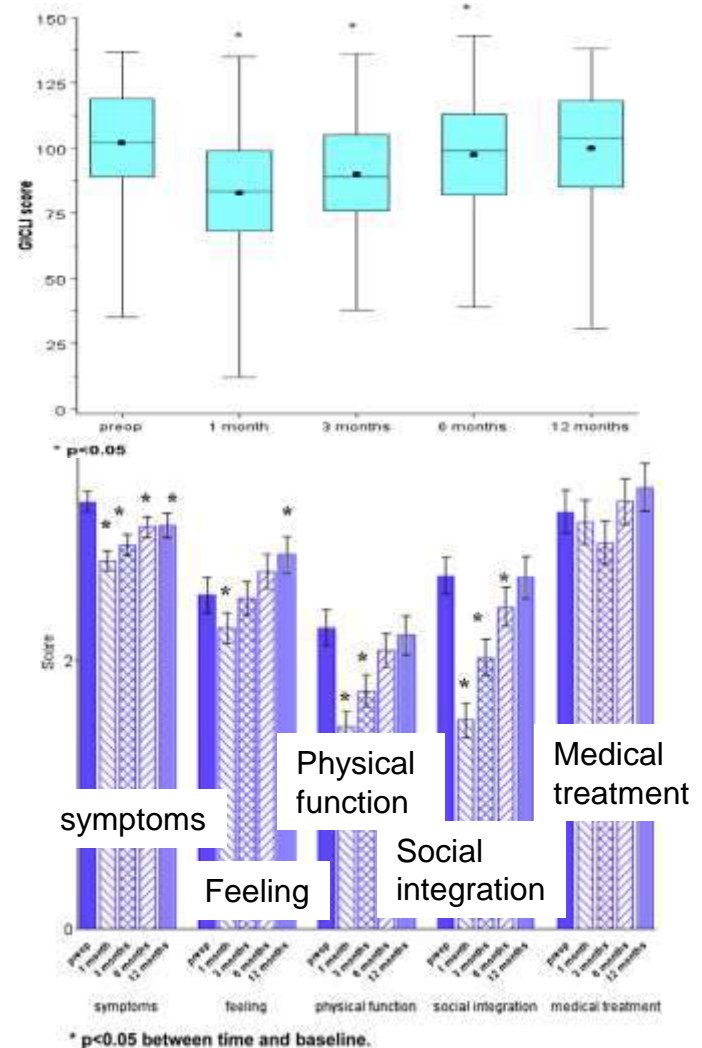
- Worst pain and brief pain increased significantly at 3 months and returned to baseline by 6 months
- Pain that interfered with ability to walk was significant between baseline and 3 months ($p = 0.0005$).



Dodson R, Ann Surg Oncol 23:S772 (2016)

QoL after CRS & HIPEC

- Prospective single centre study of n=216 patients
 - GIQLI after 1,3,6,12 months
 - Compliance 81%, 90%, 89%, 89%, 74%
 - **Decreasing factor of QoL**
 - Origin of PM at 3 months
 - Presence of stoma at 6 months
 - Length of surgery > 270 min
- disease recurrence at 12 months



Passot GM, EJSO <http://dx.doi.org/10.1016/j.ejso.2013.11.019> (2013)

QoL predicting Morbidity

A 30-day morbidity 62% and mortality 8 %

FACT-C TOI:

with complications 52.7 versus without complications 61.7 (P< 0.001)

- **Independent predictors of 30-day mortality (Multivariate analysis)**

- TOI (0.05) - higher TOI score were less likely to suffer a mortality
- Age (0.001)
- smoking (0.001)
- EWB (0,04) higher emotional score were less likely to suffer a complication

- **Independent predictors of postoperative morbidity (Multivariate analysis)**

- Diabetic status (P = 0.05)
- ECOG performance status (0.001)
- Gender (0.02).

Ihemelandu CU, Ann Surg Oncol 20:3519 (2013)

Traditional Chinese Medicine psycho-behavioral interventions

Interventions

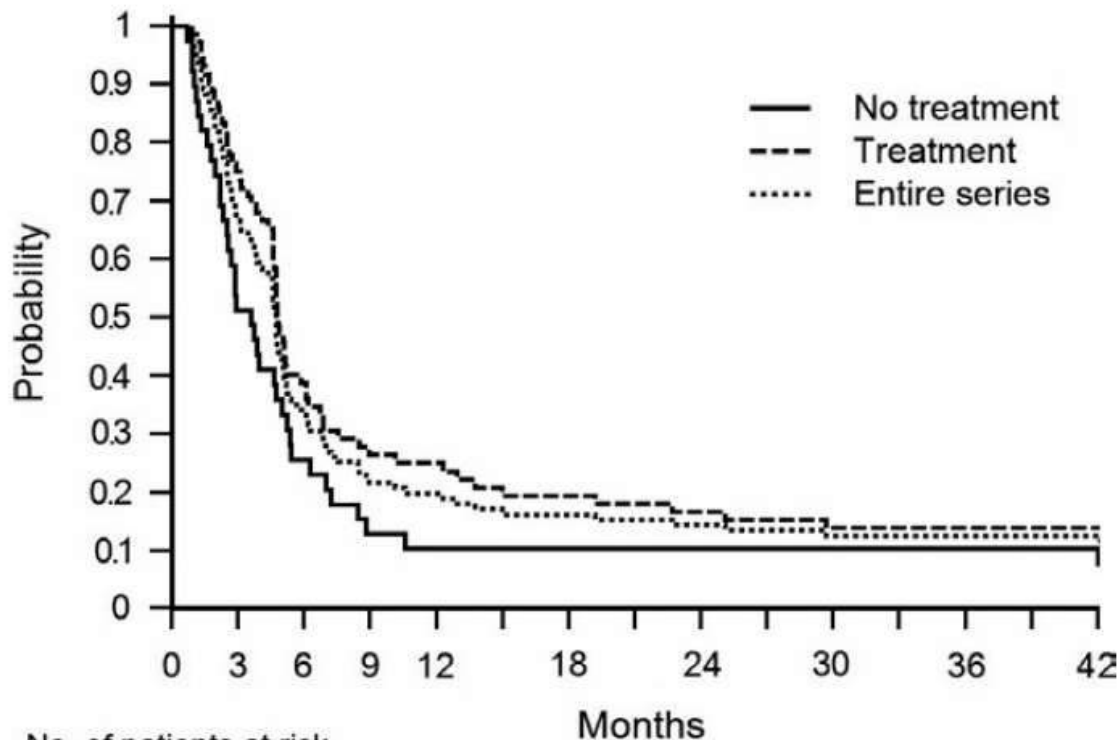
- Acupuncture
- Chinese massage
- Musical intervention
- Dietary supplement
- Qigong
- Tai Chi

Influence

- Reduces functional impairments
- Pain relief
- Depression remission
- Sleep improvement
- Reduced time to flatulence
- Relieved fatigue

Tao W, Oncotarget 6:39725 (2015)

QoL with home parenteral nutrition



No. of patients at risk

No treatment

39 20 10 5 4 4 4 4 4 3

Treatment

72 54 28 19 18 14 12 10 10 10

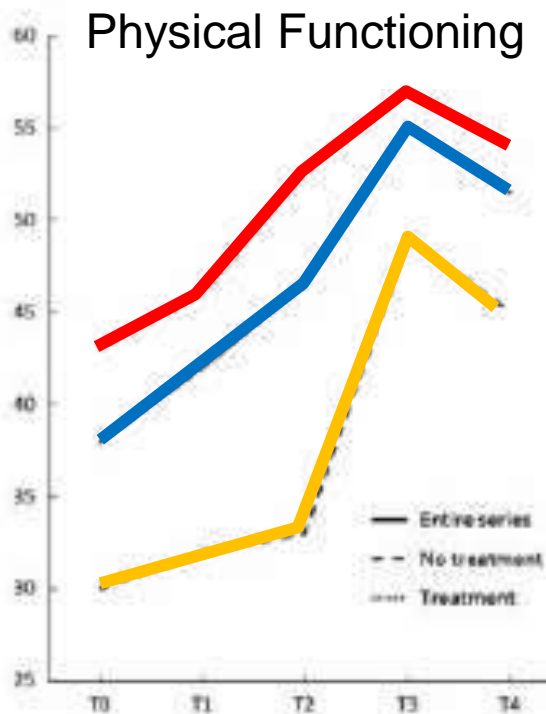
Entire series

111 74 38 24 22 18 16 14 14 13

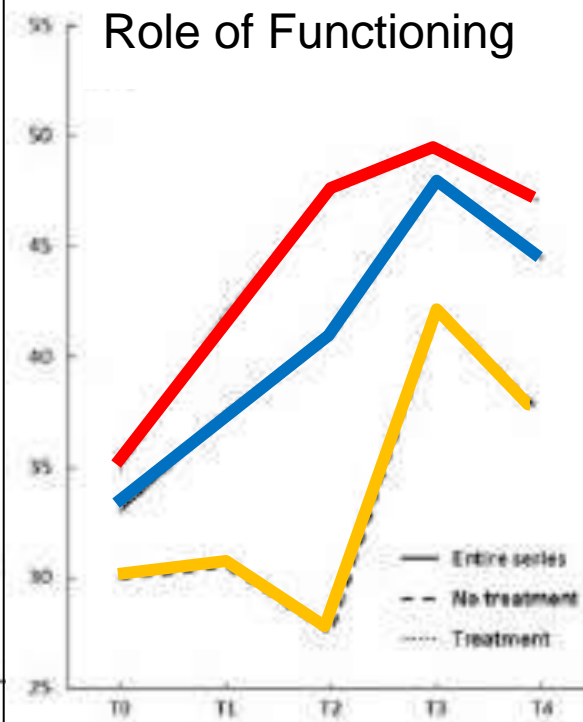
Cotogni P, *Cancer Medicine* doi: 10.1002/cam4.1111 (2017)

QoL with home parenteral nutrition

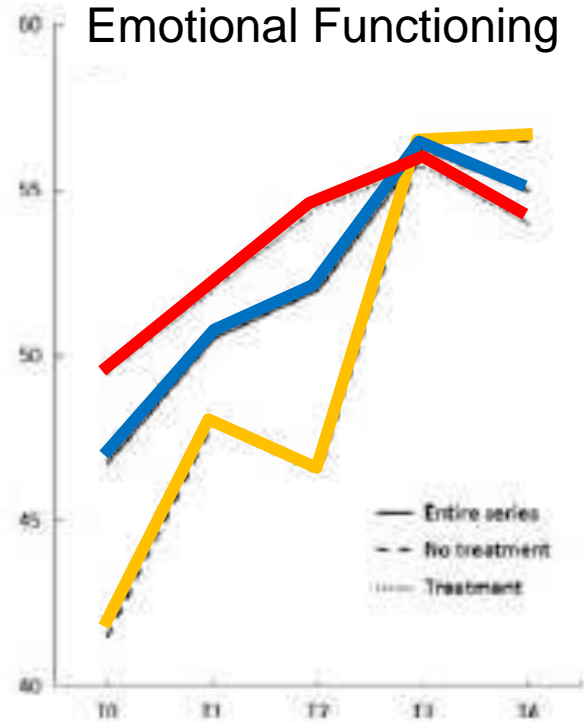
Physical Functioning



Role of Functioning



Emotional Functioning



T0: Start of HPN

T1: after 1 month

T2: after 2 months

T3: after 3 months

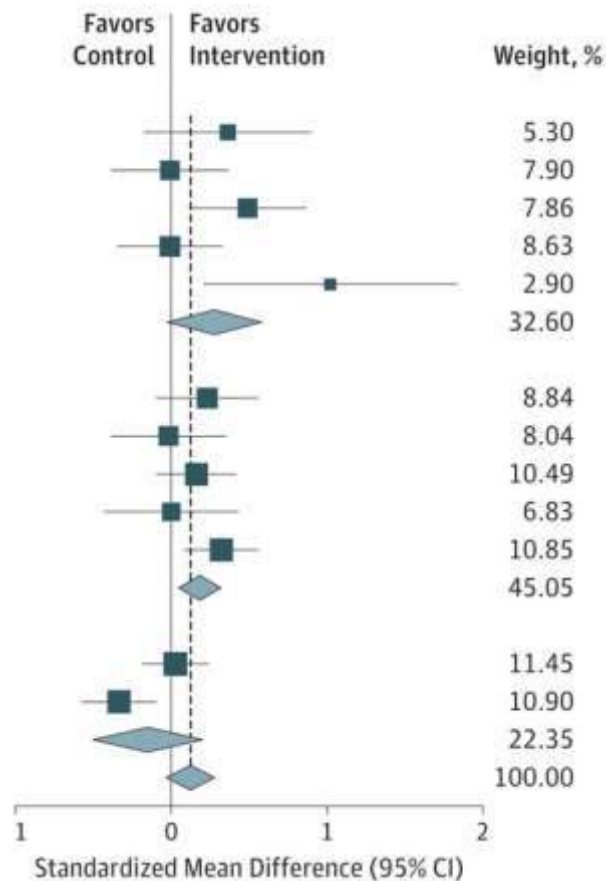
T4: after 4 months

Treatment - Entire series - No Treatment

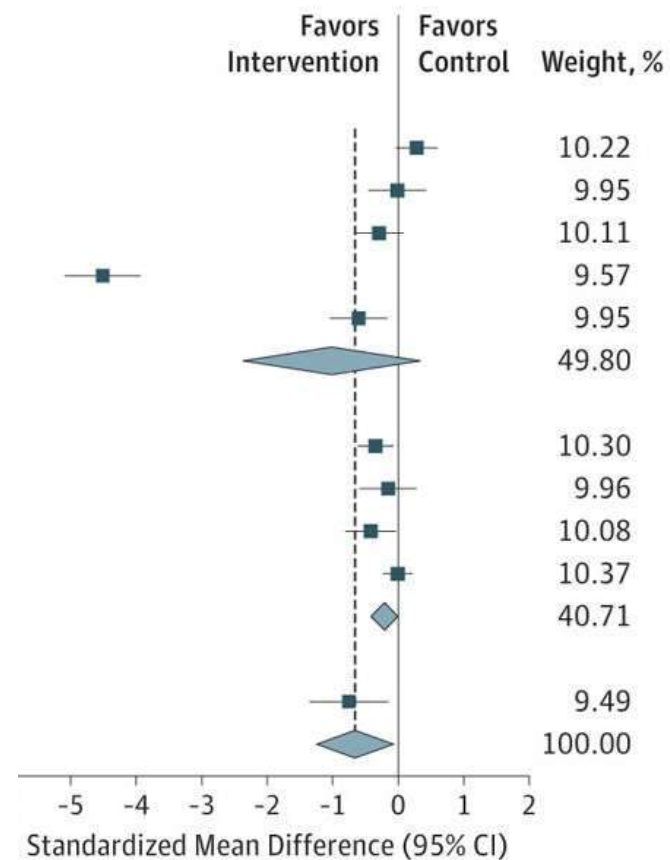
Cotogni P, *Cancer Medicine* doi: 10.1002/cam4.1111 (2017)

Palliative Care & QoL

**& Patient QoL
4-6 months FU**

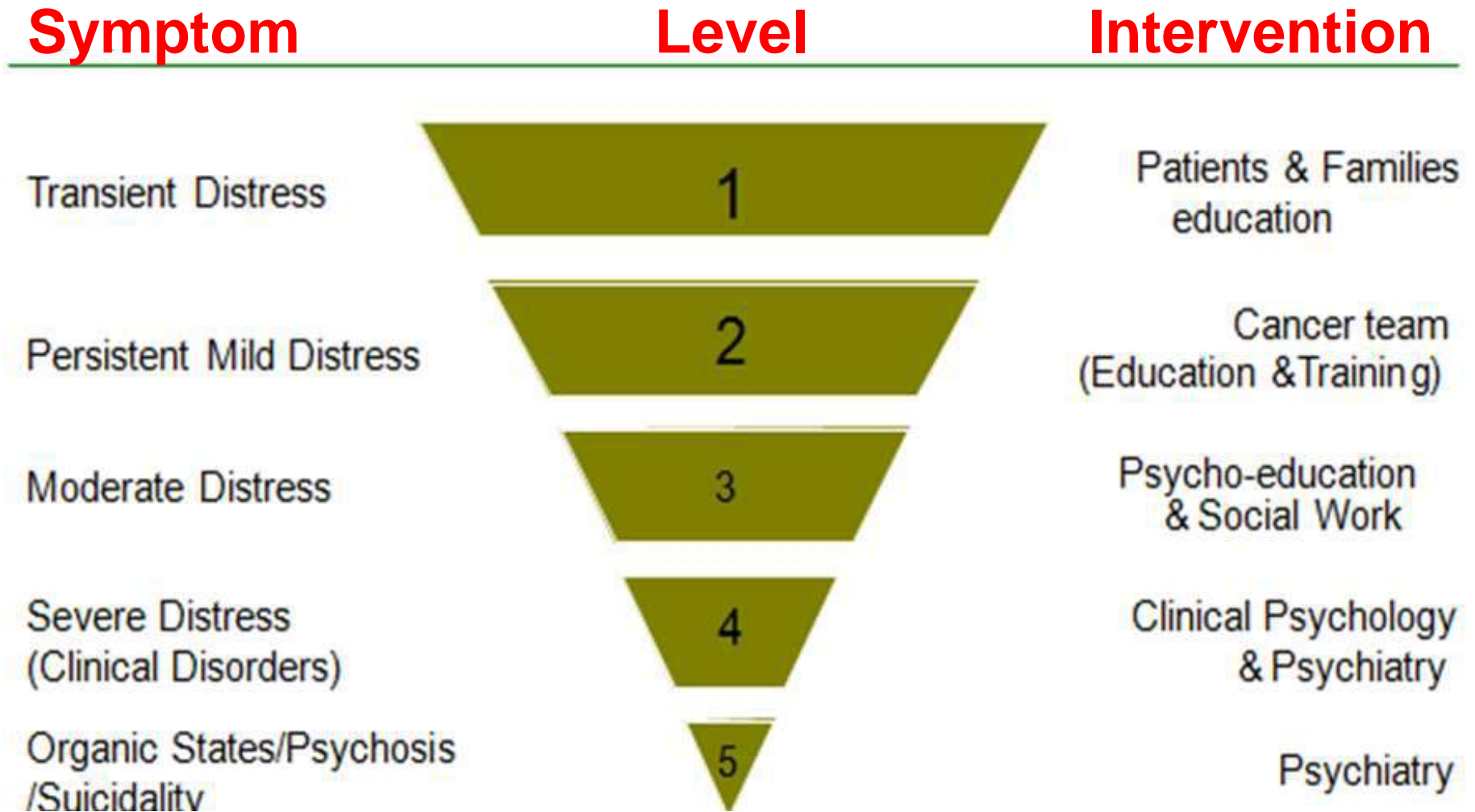


**& Patient Symptom Burden
4-6 months FU**



Kavalieratos D, JAMA 316(20): 2104 (2016)

Model of Care of Psycho-Oncology



MacHale S, 2013 with courtesy from Prof. Okasha

Conclusions

- QoL influences Survival and Morbidity in cancer patients
- QoL of Survivors after CRS and HIPEC
 - have similar QoL after 6 to 12 months compared to baseline
 - Physical, emotional and cognitive functions did not worsen significantly and change depending on age
- QoL can be influenced significantly by soft skills
 - Parenteral nutrition
 - Psycho-behavioral interventions
 - Palliative care
 - Psycho-Oncology