Comprehensive Geriatric Assessment (CGA) in older cancer patients

Comprehensive Geriatric Assessment (CGA) Part-1

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Comprehensive Geriatric Assessment Part - 2

Polypharmacy
and
Nutrition

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Comprehensive Geriatric Assessment (CGA) -Objectives

- Discuss geriatric assessment in older cancer patients
- Provide various components and tools for Geriatric Assessment
- Implementations of Geriatric Assessment in practice

Comprehensive Geriatric Assessment (CGA)

- Developed as a multidisciplinary framework
- Evaluate the impact of age-associated physiologic factors
- Coordinated use of a group of validated geriatric assessment tools
- Provide: a multidimensional evaluation
  - Individual's ability to tolerate and respond to therapy
  - Probability of impending early death
  - Likelihood that the patient will develop and/or recover from adverse effects of therapy
  - Identity of risk factors where remedial steps may be taken to potentially improve outcomes

Comprehensive Geriatric Assessment (CGA)

CGA is classically divided into “domains”, with each domain corresponding to one aspect of aging-related issues

Each domain is evaluated through one (or more) validated tools

During CGA, there is no definitive evidence to determine the specific use of a set of tools over another

Comprehensive Geriatric Assessment – Examples of scales/tools

Domains	Scales
Functional status	Eastern Cooperative Oncology Group performance status, Katz basic Activities of Daily Living Scale, Simplified Lawton's Instrumental Activities of Daily Living Scale
Comorbidities	Charlson comorbidity index
Medications	Number, type, indication
Cognitive function	Folstein Mini-Mental State Examination, Schultz-Larsen Mini-Mental State Examination, Mini-Cog, MoCA, SLUMS
Geriatric syndrome	Repeated falls, fecal and/or urinary incontinence
Depression/mood	Geriatric Depression Scale 5, Emotional questionnaire
Nutrition	Body mass index
Mobility	Timed Up and Go test
Situational assessment	Accessibility of services, mobility, social environment, accessibility of home rooms

Corre R, *et al*., J Clin Oncol 2016;34(13):1476–483.

Comprehensive Geriatric Assessment – Functional status

Interpretation(ADLS)
6 = High (patient independent)
0 = Low (patient very dependent)
Interpretation (IADLS)
- Score 0 = completely dependent
* Low score = higher dependence
- Score 5 or 8 = completely independent
- High score = higher independence

- Other tools
  - ECOG
  - Karnofsky Performance Status
  - Grip strength, etc.

Self-care	
Bathing	Toileting
Dressing	Grooming
Transferring from bed to chair	Feeding oneself
Instrumental	
Using the telephone	Doing laundry
Preparing meals	Doing housework
Managing household finances	Shopping
Taking medications	Managing transportation
Mobility	
Walking from room to room	
Climbing a flight of stairs	
Walking outside one's home	

Comprehensive Geriatric Assessment – Mobility

- Gait and balance disorders 10% (60-69 years) to >60% (80 years and older)
- Gait impairment can negatively impact QOL and functional independence
- Positive association number of steps (>4000) and all cause lower mortality
- Timed up and Go test (TUGT)
- Developed to test mobility is frail population

Comprehensive Geriatric Assessment – Comorbidity

Elderly patients have a higher probability of having other diseases:

- Chronic diseases that are not immediately life-threatening can speed up loss of organ function and limit survival
- More serious diseases, such as heart failure or emphysema, can be important competing causes of morbidity and mortality – and even more significant than cancer, depending on the situation

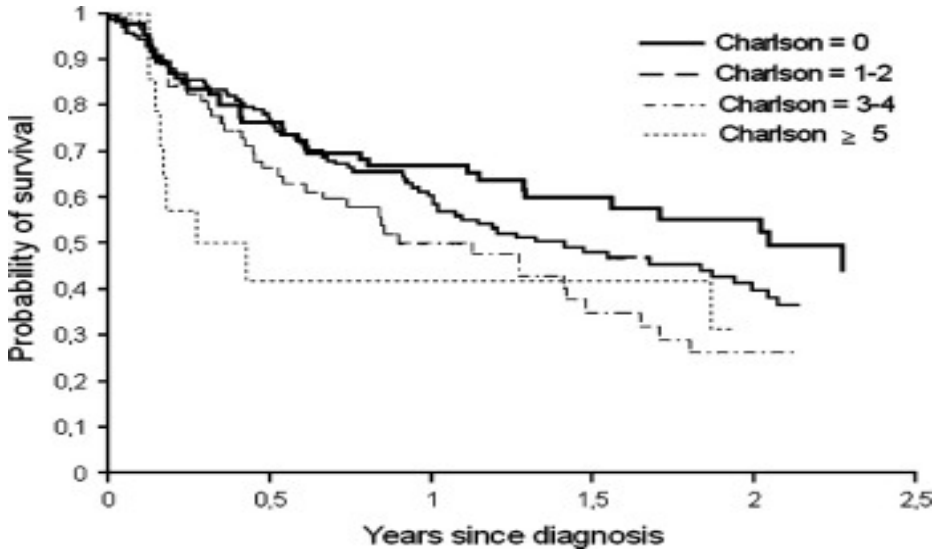
Therefore, before planning cancer treatment, it is important to understand the patient's life expectancy and the limits comorbidities will place on the treatment plan

Life expectancy is also deeply affected by other domains such as functionality, social status and cognition

Comprehensive Geriatric Assessment – Comorbidity

- Charlson Comorbidity Index – designed to predict 1 year mortality

Condition	Assigned weight
Myocardial infarction	1
Congestive heart failure	1
Peripheral vascular disease	1
Cerebrovascular disease	1
Dementia	1
Chronic pulmonary disease	1
Connective tissue disease	1
Ulcer disease	1
Liver disease, mild	1
Diabetes	1
Hemiplegia	2
Renal disease, moderate or severe	2
Diabetes with end organ damage	2
Any malignancy	2
Leukaemia	2
Malignant lymphoma	2
Liver disease, moderate or severe	3
Metastatic solid malignancy	6



- Cumulative Illness Rating Scale (CIRS) – predictor for readmission of older individuals
  - https://www.mdcalc.com/cumulative-illness-rating-scale-geriatric-cirs-g#next-steps

Jacot W, Colinet B, Bertrand D, et al. Quality of life and comorbidity score as prognostic determinants in non-small-cell lung cancer patients. *Ann Oncol*. 2008;19(8):1458-1464. doi:10.1093/annonc/mdn064

Comprehensive Geriatric Assessment – Prognostication and Risk Assessment

- Calculating life expectancy
  - Lee Index
  - Schonberg's Index
  - ePrognosis (Gives results for of the both above indexes)

- Risk Stratification
  - Chemotoxicity risk calculation

Chemotherapy side effects in elderly patients

Chemotherapy side effects are more intense

Elderly patients can expect a higher rate of neutropenia, fatigue, cardiac toxicity and neuropathy than younger patients

Elderly patients more often need dose reductions, delays and permanent interruptions than younger patients

However, elderly patients benefit from standard chemotherapy regimens, including breast cancer and lung cancer, if carefully selected and monitored

Comprehensive Geriatric Assessment – Chemotoxicity assessment

I. CARG (Cancer and Aging Research Group)

Total Risk Score		%Risk	N
Low	0 to 3	25%	28
	4 to 5	32%	100
Medium	6 to 7	50%	136
	8 to 9	54%	91
High	10 to 11	77%	62
	12 to 19	89%	47

II. CRASH (Chemotherapy Risk Assessment Scale for High-Age Patients)

	CRASH score (points / % with severe toxicity)			
Sample	**Heme subscore**	**Non-Heme subscore**	**Combined score**	**Risk Category**
Derivation (n=347)	0-1: 7% 2-3: 23% 4-5: 54% Greater than 5: 100%	0-2: 33% 3-4: 46% 5-6: 67% Greater than 6: 93%	0-3: 50% 4-6: 58% 7-9: 77% Greater than 9: 79%	Low Int-Low Int-High High
Validation	0-1: 12% 2-3: 35% 4-5: 45% Greater than 5: 50%	0-2: 42% 3-4: 59% 5-6: 66% Greater than 6: 100%	0-3: 61% 4-6: 72% 7-9: 77% Greater than 9: 100%	

Ref: Extermann et al., ASCO 2010

Comprehensive Geriatric Assessment – Cognition

Cognition in cancer patients is crucial for treatment compliance

Patients need to be able to understand information given, prognosis and treatment options

Ultimately, patients need to be able to make decisions independently

Elderly patients may have cognitive dysfunction that partly or completely precludes decision making – and cognitive evaluation is therefore crucial

Cognitive dysfunction should be carefully differentiated from depression and hearing problems

Comprehensive Geriatric Assessment – Cognition

- Affect decision making, administration, and outcome of the treatments
- Various tools:
  - Mini-Cog
  - MMSE (Mini Mental Status Examination)
  - MoCA (Montreal Cognitive Assessment)
  - SLUMS (St. Louis University Mental Status)
  - Many others

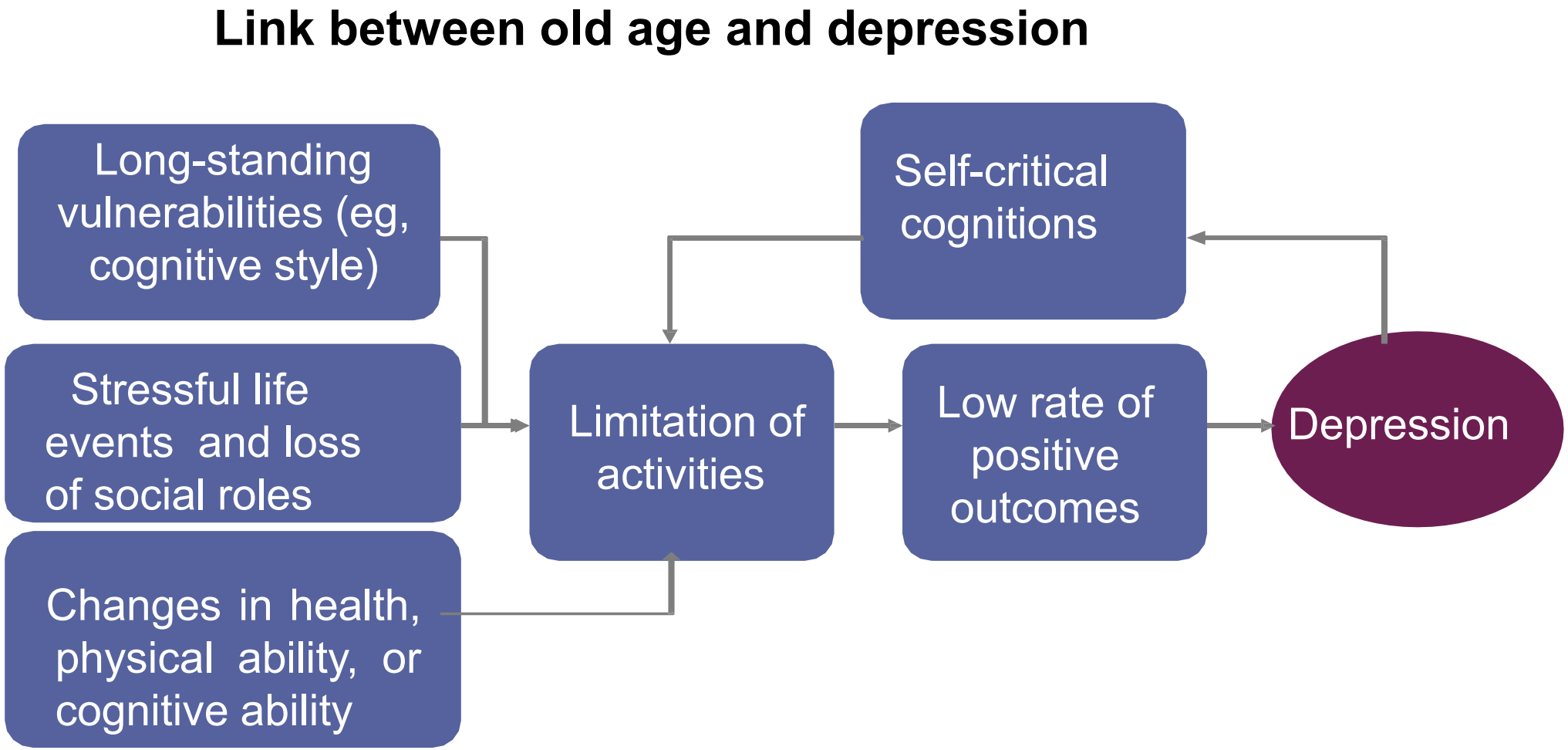
Comprehensive Geriatric Assessment – Cognition
Mini-Cog

- Step 1: Three words registration (Max 3 attempts)
- Step 2: Clock Drawing (Normal clock = 2 points; 1 point for clock and 1 point

for correct time 11:10)

- Step3: Three Words Recall (3 points; 1 point for each correct recall)
- Total max score = 5. Cut point is <3 for dementia screening)

Comprehensive Geriatric Assessment – Psychological state



Fiske A, *et al.,* Annu Rev Clin Psychol. 2009; 5: 363–389. Reproduced with permission from Annual review of Clinical Psychology, Volume 5, © by Annual reviews, http://www.annualreviews.org

From: ESMO

Comprehensive Geriatric Assessment – Geriatric Depression Scale: Short Form

1. Are you basically satisfied with your life? YES / **NO**
2. Have you dropped many of your activities and interests? **YES** / NO
3. Do you feel that your life is empty? **YES** / NO
4. Do you often get bored? **YES** / NO
5. Are you in good spirits most of the time? YES / **NO**
6. Are you afraid that something bad is going to happen to you? **YES** / NO
7. Do you feel happy most of the time? YES / **NO**
8. Do you often feel helpless? **YES** / NO
9. Do you prefer to stay at home, rather than going out and doing new things? **YES** / NO
10. Do you feel you have more problems with memory than most? **YES** / NO
11. Do you think it is wonderful to be alive now? YES / **NO**
12. Do you feel pretty worthless the way you are now? **YES** / NO
13. Do you feel full of energy? YES / **NO**
14. Do you feel that your situation is hopeless? **YES** / NO
15. Do you think that most people are better off than you are? **YES** / NO

Comprehensive Geriatric Assessment – Geriatric Depression Scale: Short Form

Have 15 Yes/No questions

Asks about how you have felt over the past week

A score > 5 is suggestive of depression

A score ≥ 10 is indicative of depression

A score of >5 points should warrant a follow-up comprehensive assessment

Comprehensive Geriatric Assessment – Social support

Benefit from extensive social support

Elderly patients are likely to have less social support due to widowhood, death of friends and other family members

Complexity of undergoing cancer treatment –

- correctly taking medications at home
- keeping appointments
- bringing to exams
- seeking assistance in case of complications

Elderly abuse (physical, economic and emotional)

Communication and Intervention

- Communication with the care providing team
- What tools were used
- Using simple language
- Recommend intervention as needed
- Follow-ups if model of care allows

Polypharmacy and Nutrition

Rachel Basinger, PharmD, BCACP, CTTS
Assistant Professor
Texas Tech University Health Sciences Center
Jerry H. Hodge School of Pharmacy

Pharmacist on Your Team

- Education and Training
  - PharmD
  - Residency
  - Fellowship
  - Board Certification
- Clinical impact
  - Extension of Provider
  - Patient education
  - Drug expert

Objectives

- State the consequences of polypharmacy
- Implement strategies to reduce polypharmacy
- Discuss nutrition in oncology
- Provide general recommendations for nutrition

Polypharmacy

Modern Medicine

- Medications are use to prevent, cure, treat, or reduce symptoms
- Reduce disease burden and death
- Short term (10 day course of antibiotics) or life long (anticoagulation after heart valve replacement)
- Single agent (anticoagulation) or multiple (blood pressure) agents required to achieve goal
- More disease states → more medications

Audience Reflection

- How many of your patients report using
  - At least one medication?
  - At least 2 medications?
  - At least 5 medications?
  - At least 10 medications?
- Do your patients report OTC and herbals/supplements?
- Do your patients feel they take too many medications?

Medication Use in Older Adults

- 12% of population but 34% of RX and 30% of OTC medications
- 90% of older adults take at least 1, 80% at least 2, and 36% take at least 5 different prescription medications.
- 43.7% believe they are taking a large number of medications
- 92% would be willing to stop taking at least one of their medications
- 66.6% want to decrease the number of medications they are taking
- Most commonly sought source of information is the internet (35.5%) versus health care professionals (32.2%).

American Public Health Association. Fact Sheet: Prescription Medication Use by Older Adults.
Turner J, Tannenbaum C. J Am Geriatr Soc. 2017;65(12):2691-2696.
Reeve E, Wolff J, Skehan M. Assessment of attitudes towards deprescribing in older Medicare beneficiaries in the United States. JAMA Intern Med. 2018.

Audience Response

- How do you define “too many medications?”

What is Polypharmacy?

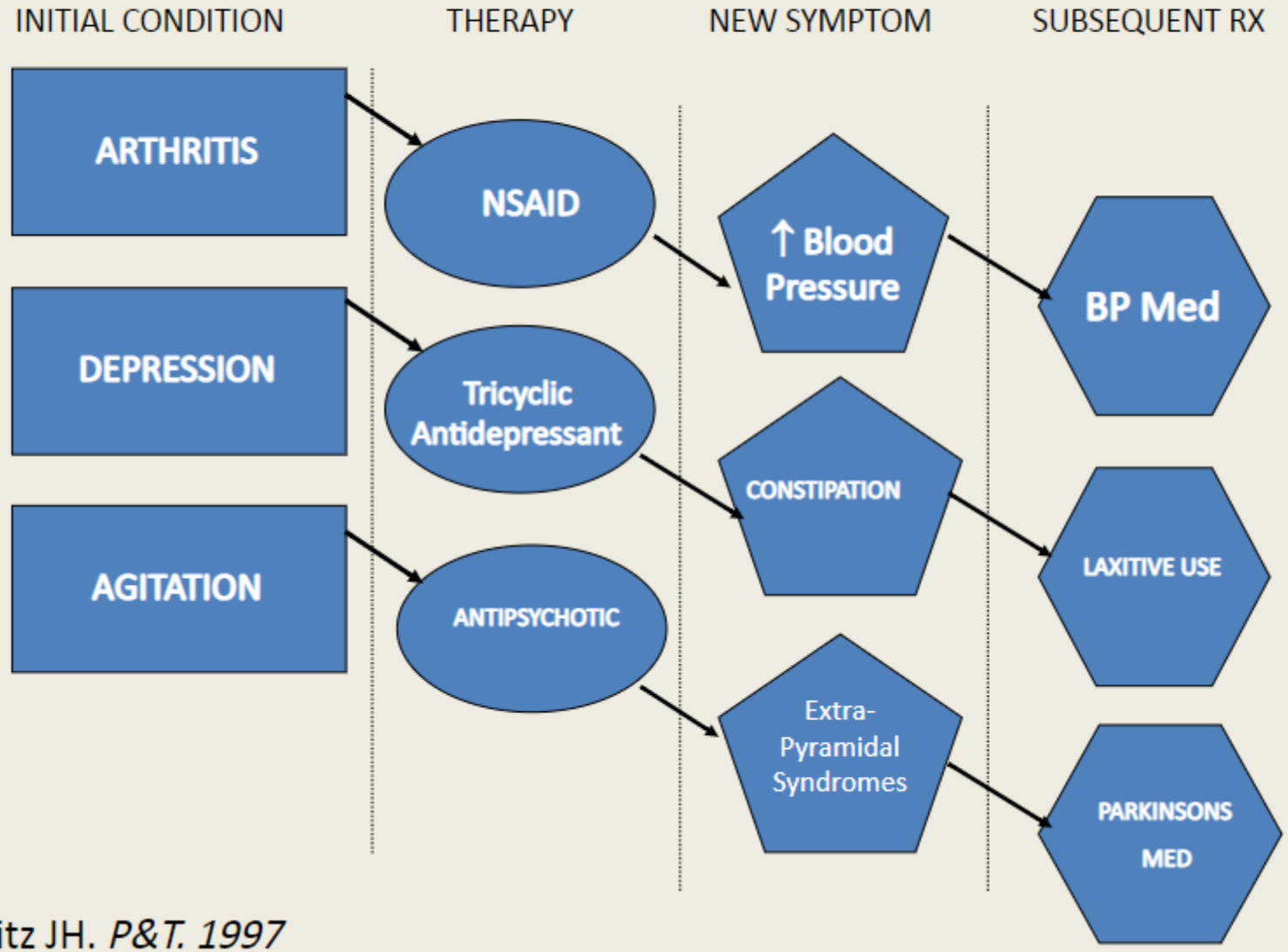
- Simply means “many drugs” but no consensus on what that means
- Study found 138 definitions in the literature
  - Most (80%) defined by number of medications
    - Most common was >5 medications
    - Varied from >2 to >10
  - Few by duration of therapy
    - >90 days or >240 days
  - Few by descriptions
    - Appropriate vs inappropriate use
    - Duplicate indications or no indication, interactions, improper dose, etc.

Masnoon N, Shakib S, Caughey G, et al. What is polypharmacy? A systematic review of definitions. BMC Geriatr. 2017.

Factors Leading to Polypharmacy

- Older age
- More symptoms
- More disease states
- Obligation to prescribe
- Multiple providers
- Lack of provider coordination
- Multiple pharmacies
- Drug regimen changes
- Holding on to medications discontinued
- Self-treatment
- Side effects (using a drug to treat side effect of another drug)

The Prescribing Cascade



Gurwitz JH. *P&T. 1997*

Risk of Polypharmacy

- Burden of having to take multiple pills
  - A lot to swallow
  - Various timing or instructions on administration
- Costs
- Non-adherence
- Adverse drug events
- Drug interactions

- Chicken or the egg?
  - Functional decline
  - Cognitive impairment
  - Falls
  - Urinary incontinence
  - Decreased nutritional status

Maher R, Hanlon J, Hajjar E. Clinical consequences of polypharmacy in elderly. Expert opin Drg Saf. 2014.

Age Related Changes Effect Medications

- Just because the person has been on it for years, doesn't mean the body is reacting the same way as when they were younger
- Absorption
  - Enters the body through GI system, lungs, skin, etc.
- Distribution
  - Medication moves within the body
  - Increase in body fat and decrease in lean body mass
  - Decrease in proteins that bind and carry drugs

Age Related Changes Effect Medications

- Metabolism
  - Breaks down the medication
  - Decrease in liver function
- Excretion
  - Eliminates it from the body
  - Decrease in kidney function
- Heightened or reduced response
  - Changes in number of receptors drugs bind to, or their reaction at the receptor, or how the body self-regulates

What Can Providers Do?

- Routine evaluations of medication use
  - AGS Beers Criteria, START/STOPP Criteria
  - Encouraged medication bottles at every visit (RX, herbal, OTC)
- Deprescribing
  - Reduce or stop medications that may no longer be of benefit or causing harm
- Use medications with multiple indications
- Require non-pharmacological approaches
  - Prescribe, don't encourage, lifestyle changes
  - PT, OT, Cardiac rehab, pulmonary rehab, etc.
- Provide counseling regarding medications
  - Encourage patients to ask questions

American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults J Am Geriatr Soc. 2019 Jan 29.
Barry, et al. START (screening tool to alert doctors to the right treatment)--an evidence-based screening tool to detect prescribing omissions in elderly patients. *Age and Ageing, 36*(6), 632-638. 2017.
Hamilton, et al. Potentially inappropriate medications defined by STOPP criteria and the risk of adverse drug events in older hospitalized patients. *Archives of Internal Medicine, 172*(11), 1013-1019. 2011.

Nutrition

Adapted from previous presentation provided from Jill Frost, PharmD, BCACP

What Can Providers Do?

- Multidisciplinary team
- Screening tools
- Pharmacist-led interventions
- Computer-based strategies

Baruth, et al. Polypharmacy in older adults: The role of the multidisciplinary team. *Hospital Practice*. 48:sup1, 56-62.

Key Points to Consider

- Proper nutrition is needed to fight infections and heal
- Location of cancer
  - Head, neck, esophagus, stomach, intestines, pancreas, liver
- Side effects of therapy
  - Smell, appetite, and the ability to eat can be affected
- Taste bud receptors may be altered

Malnutrition

- *A condition caused by not getting enough calories or the right amount of key nutrients, such as vitamins and minerals, that are needed for health. Malnutrition may occur when there is a lack of nutrients in the diet or when the body cannot absorb nutrients from food. Cancer and cancer treatment may cause malnutrition.*

https://www.cancer.gov/publications/dictionaries/cancer-terms/def/malnutrition

Common Causes of Malnutrition

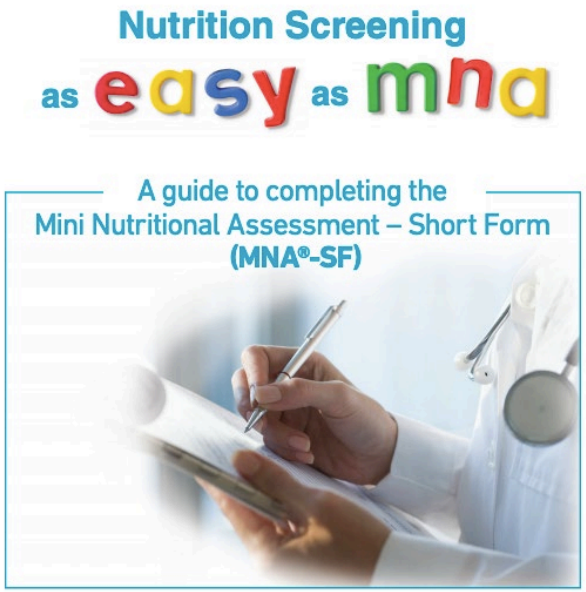
- Anorexia is the most common cause of malnutrition
  - Loss of appetite or desire to eat
  - Can occur at any stage; very common with advanced stages
- Cachexia is weakness with loss of body weight and muscle mass; common in patients with tumors affecting eating and digesting

Other Causes of Malnutrition

- N/V
- Dry mouth
- Sores
- Trouble or pain with swallowing
- Feeling full
- Constipation/diarrhea
- Taste bud or smell alterations
- Depression
- Pain
- Other side effects from treatment or surgeries

Mini Nutritional Assessment – Short Form (MNA® -SF)

- Screening tool Developed by Nestlé
- Used to help identify elderly patients who are malnourished or at risk of malnutrition
- Well validated and correlates to morbidity and mortality



https://www.mna-elderly.com/sites/default/files/2021-10/mna-guide-english-sf.pdf

MNA®-SF Questions

Screening

A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?
0 = severe decrease in food intake
1 = moderate decrease in food intake
2 = no decrease in food intake ☐

B Weight loss during the last 3 months
0 = weight loss greater than 3 kg (6.6 lbs)
1 = does not know
2 = weight loss between 1 and 3 kg (2.2 and 6.6 lbs)
3 = no weight loss ☐

C Mobility
0 = bed or chair bound
1 = able to get out of bed / chair but does not go out
2 = goes out ☐

D Has suffered psychological stress or acute disease in the past 3 months?
0 = yes 2 = no ☐

E Neuropsychological problems
0 = severe dementia or depression
1 = mild dementia
2 = no psychological problems ☐

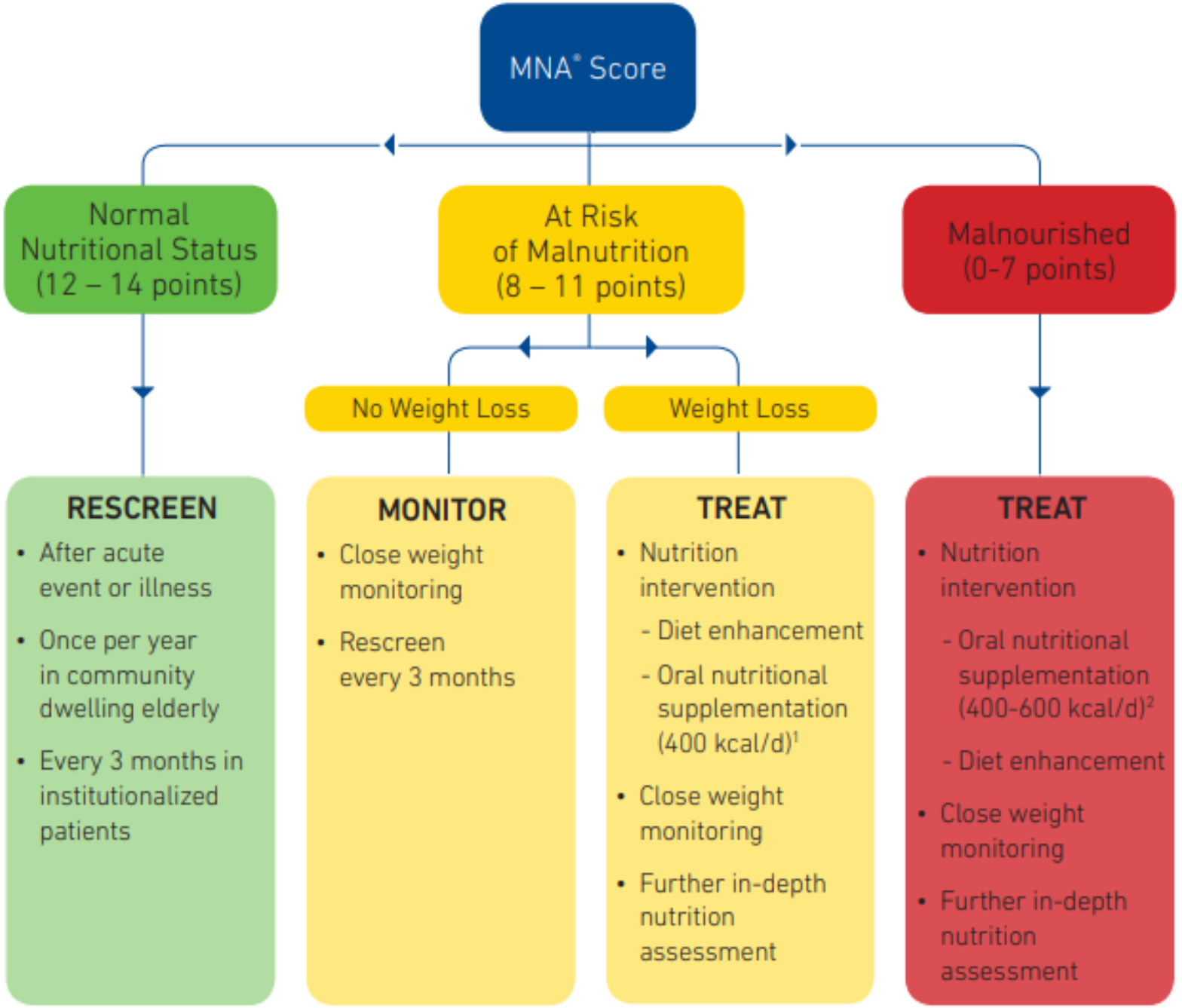
F1 Body Mass Index (BMI) (weight in kg) / (height in m^2)
0 = BMI less than 19
1 = BMI 19 to less than 21
2 = BMI 21 to less than 23
3 = BMI 23 or greater ☐

Screening score
(max. 14 points)

12-14 points:	Normal nutritional status
8-11 points:	At risk of malnutrition
0-7 points:	Malnourished

MNA Treatment

- Include your dieticians



Nutrition Treatment

- Focus on higher calorie foods
- Supplementation with parenteral and enteral nutrition
- Appetite stimulants
  - Dronabinol (Marinol®) - cannabinoid receptor agonist
  - Megestrol (Megace®) - antagonizes the metabolic effects of catabolic cytokines
  - Dexamethasone - exact mechanism unknown
- Increased saliva
  - Chewing gum/hard candies
  - Pilocarpine – cholinergic agonist
  - Bethanechol – cholinergic agonist
    - May also improve tastes

Murtaza, et al. Alteration in Taste Perception in Cancer: Causes and Strategies of Treatment. *Front Physiol*. 2017;8:134. Published 2017 Mar 8.

Prevention and treatment of taste alterations

- Zinc supplementation
- Lemon juice added to foods
- Avoid metal utensils
- Amifostine (Ethyol®) – scavenger of free radicals to protect tissues from damage caused by radiation and chemotherapy
- Diet changes
  - More: fats and sauces, condiments, blander foods, something sweet to meats, boiled foods
  - Smaller, more frequent meal
  - Avoid beef

Murtaza, et al. Alteration in Taste Perception in Cancer: Causes and Strategies of Treatment. *Front Physiol*. 2017;8:134. Published 2017 Mar 8.

Questions?

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