CAR-T and Rehab

Comprehensive Care of the Bone Marrow Transplant Patient

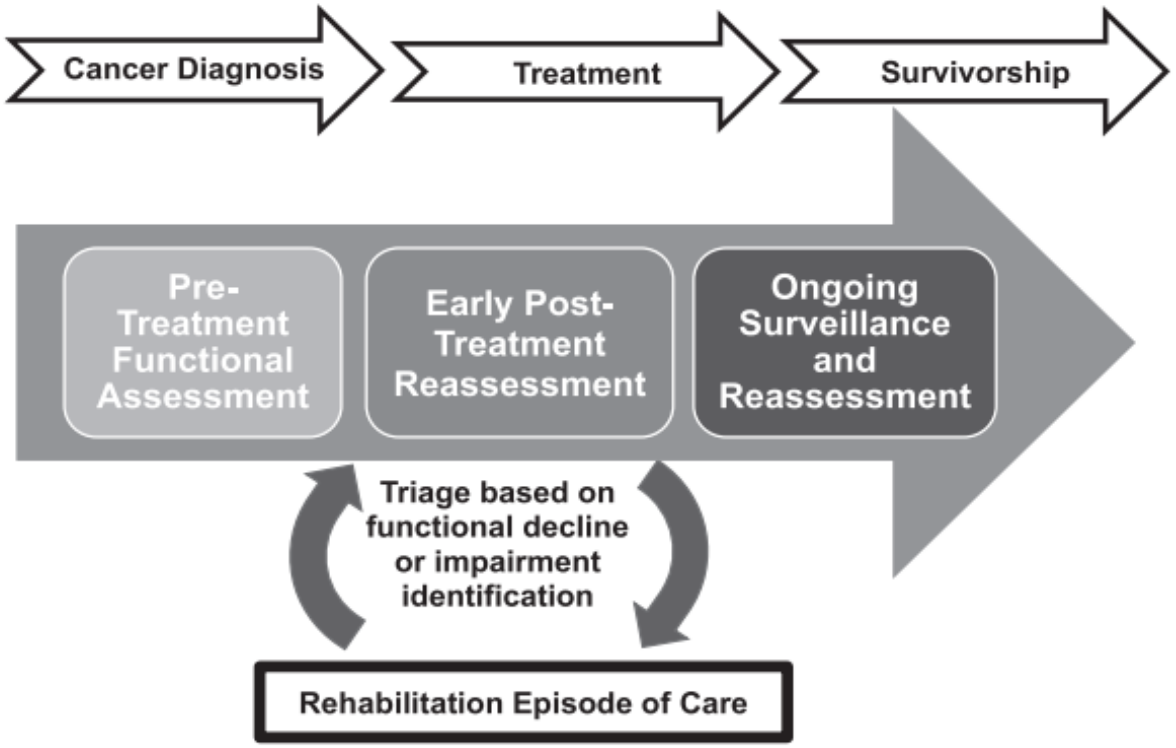
Macy Hogan, PT, DPT

Franciscan Health

Objectives

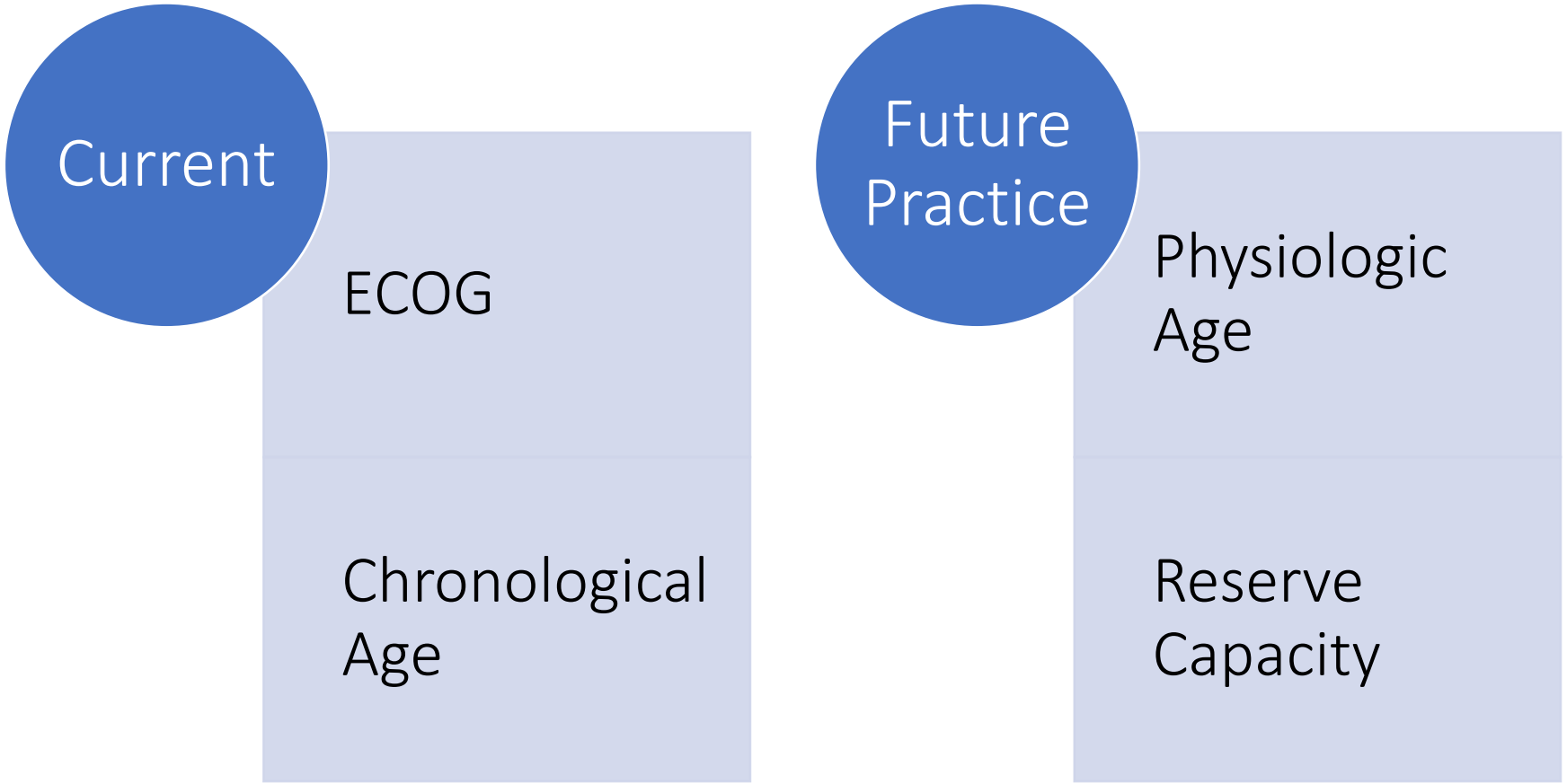
- To address special considerations for BMT patients to improve awareness, clinical reasoning, and standard of care when treating a BMT patient, particularly patients undergoing CAR-T therapy
- To improve awareness of changes in the field related to comprehensive cancer care, including appropriate risk stratification, Prospective Surveillance Model, and pre-/post- transplant and CAR-T referral to supportive services
- To facilitate awareness and utilization of screening measures to assess need for skilled rehabilitation services and promote early referral

Prospective Surveillance Model



Barnes CA, Stout NL, Varghese TK Jr, et al. Clinically Integrated Physical Therapist Practice in Cancer Care: A New Comprehensive Approach. Phys Ther. 2020;100(3):543-553. doi:10.1093/ptj/pzz169

Risk Stratification



Ethun, C.G., Bilen, M.A., Jani, A.B., Maithel, S.K., Ogan, K. and Master, V.A. (2017), Frailty and cancer: Implications for oncology surgery, medical oncology, and radiation oncology. CA: A Cancer Journal for Clinicians, 67: 362-377. https://doi.org/10.3322/caac.21406

Klepin HD, Geiger AM, Tooze JA, et al. Geriatric assessment predicts survival for older adults receiving induction chemotherapy for acute myelogenous leukemia. Blood. 2013;121(21):4287-4294. doi:10.1182/blood-2012-12-471680

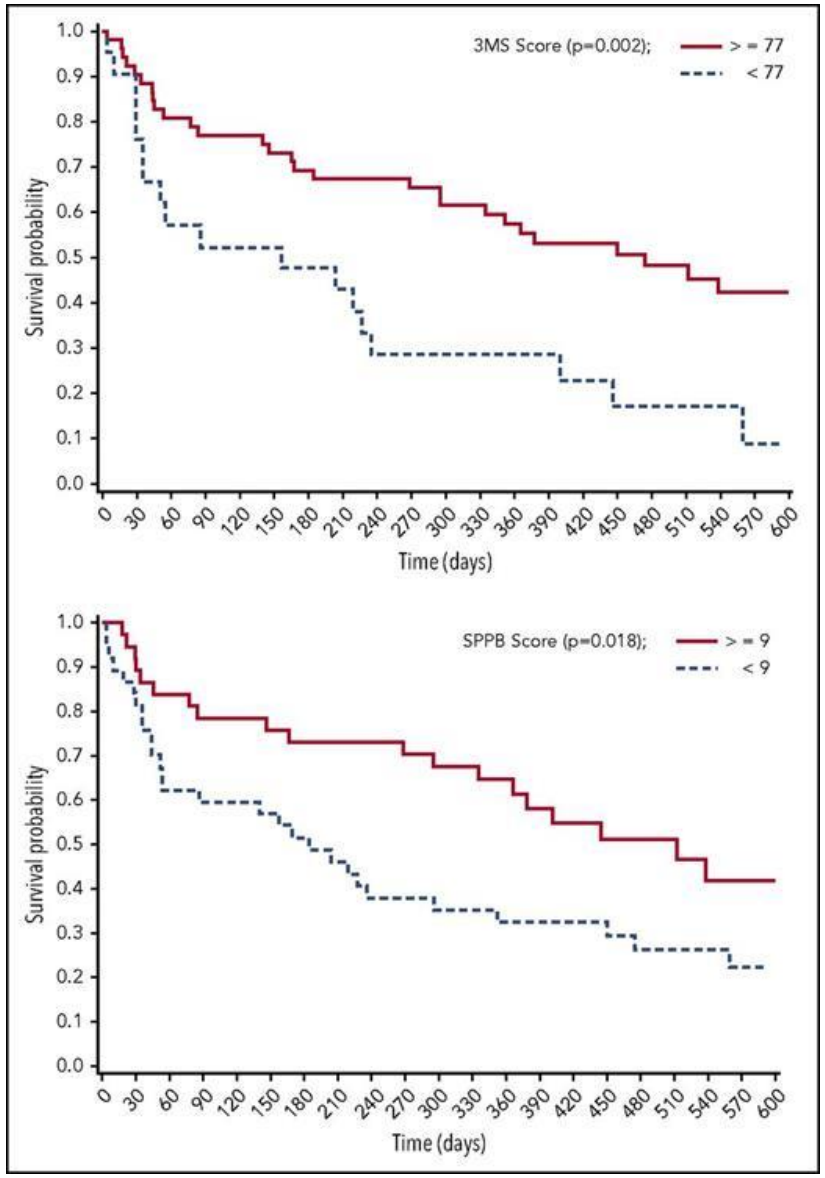
Geriatric Assessment

- **Cognitive function (3 MS)**
- Psychological state (CES-D, Distress Thermometer)
- **Physical function (Pepper Assessment Tool for Disability, Short Physical Performance Battery [SPPB])**
- Comorbid disease (Hematopoietic Cell Transplantation Comorbidity Index Score)

FINDINGS

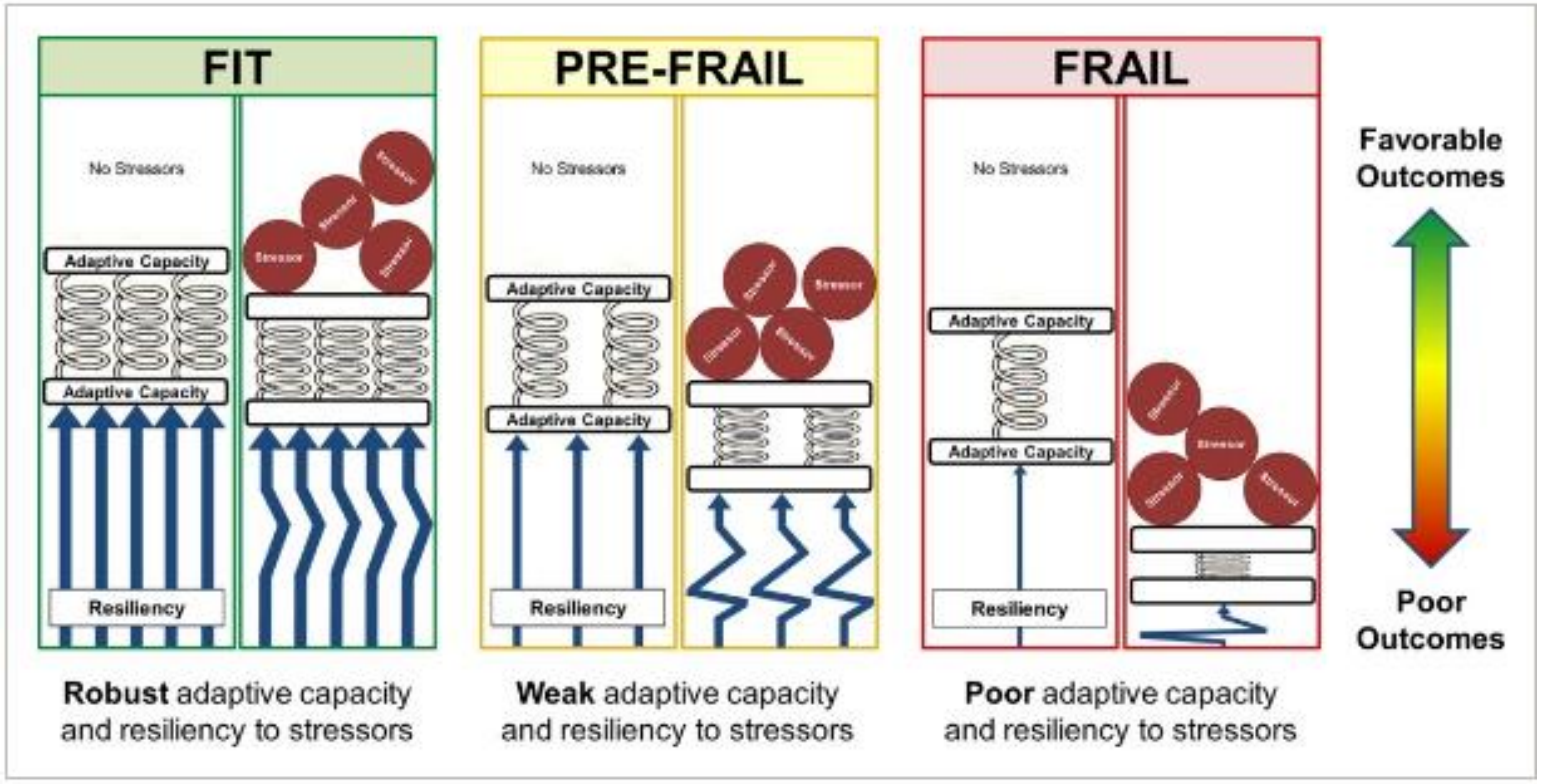
- Physical function (PF) and cognitive function more important than chronological age
- PF and cog function improved prediction of OS by 60%
- SPPB: Score 5-7, 2.6x higher risk of death or rehospitalization compared with Scores of 8-12

Klepin HD, Geiger AM, Tooze JA, et al. Geriatric assessment predicts survival for older adults receiving induction chemotherapy for acute myelogenous leukemia. Blood. 2013;121(21):4287-4294. doi:10.1182/blood-2012-12-471680



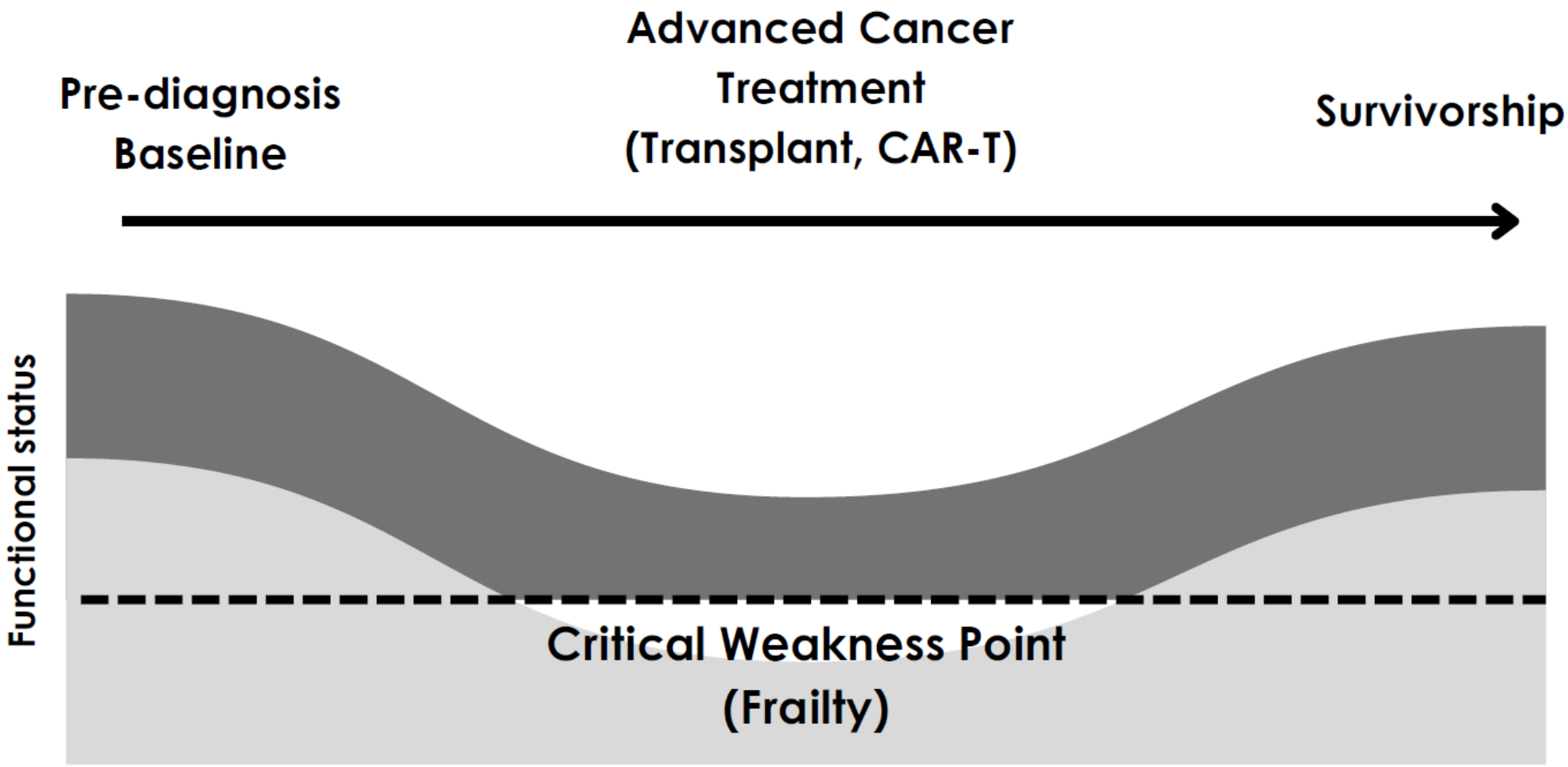
Gregory A. Abel,Heidi D. Klepin, Frailty and the management of hematologic malignancies, Blood, 2018, Figure 1.

Frailty Risk Stratification



Ethun, C.G., Bilen, M.A., Jani, A.B., Maithel, S.K., Ogan, K. and Master, V.A. (2017), Frailty and cancer: Implications for oncology surgery, medical oncology, and radiation oncology. CA: A Cancer Journal for Clinicians, 67: 362-377. https://doi.org/10.3322/caac.21406

Adaptive Capacity and Resiliency



TOP Evaluation

Frailty and Functional Performance

- Strength and endurance
- Fatigue

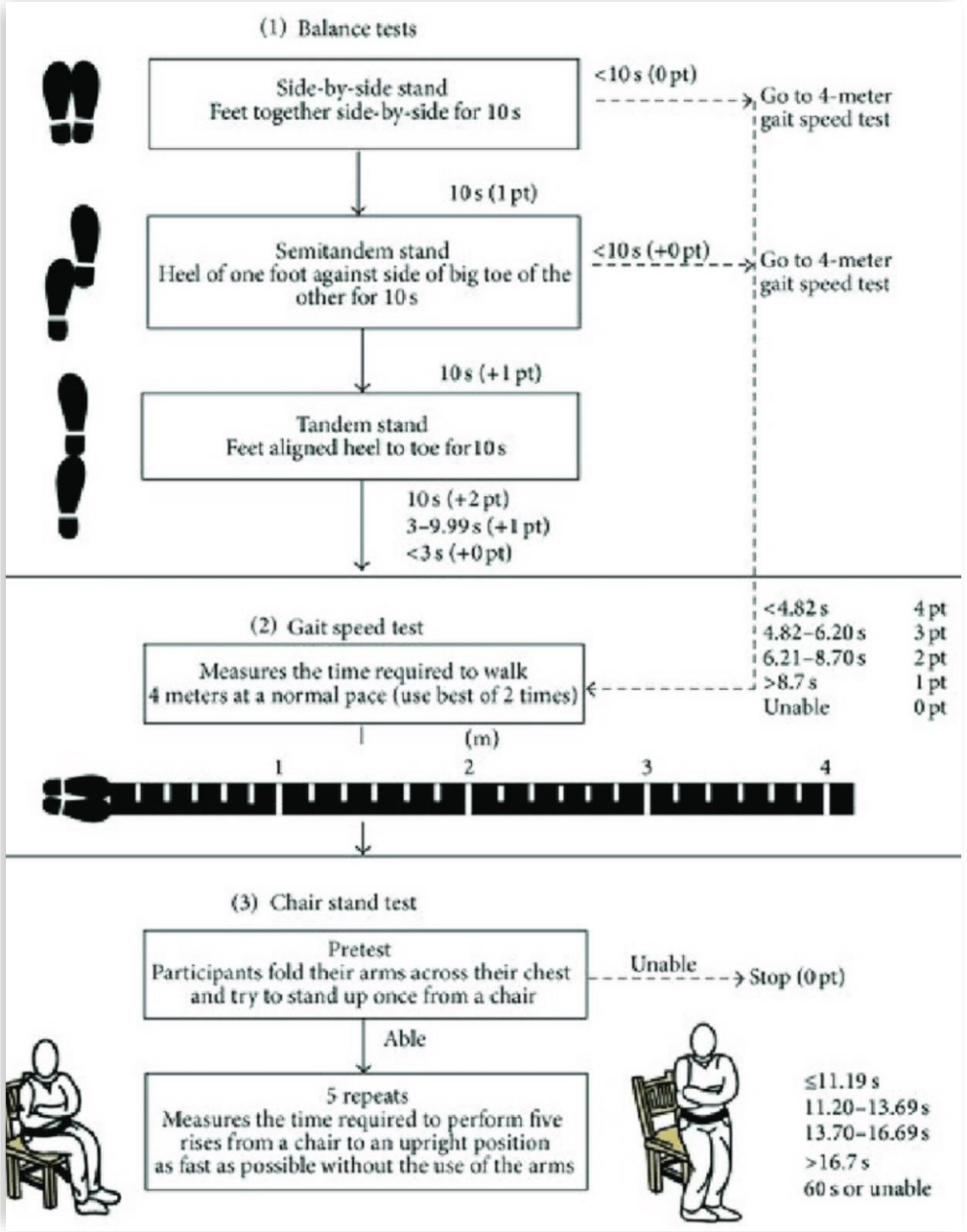
Neurological baseline

- Cognitive and Balance

Other relevant co-morbidities

- Musculoskeletal

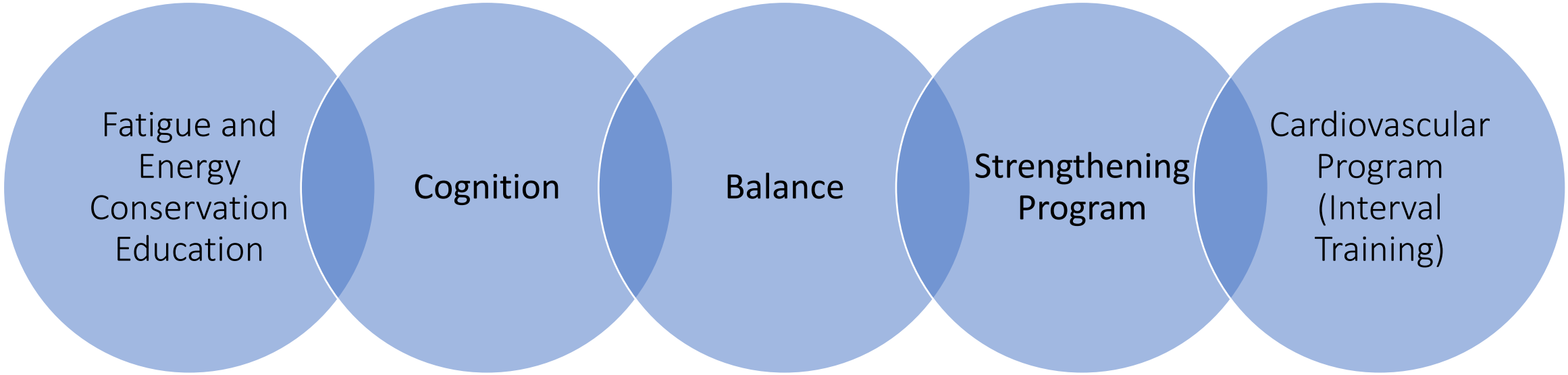
Short Physical Performance Battery (SPPB)



Fritz, Stacy PT, PhD1; Lusardi, Michelle PT, PhD2. White Paper: “Walking Speed: the Sixth Vital Sign”. Journal of Geriatric Physical Therapy 32(2):p 2-5,

Liu, M. A., DuMontier, C., Murillo, A., Hshieh, T. T., Bean, J. F., Soiffer, R. J., Stone, R. M., Abel, G. A., & Driver, J. A. (2019). Gait speed, grip strength, and clinical outcomes in older patients with hematologic malignancies. *Blood*, *134*(4), 374–382. https://doi.org/10.1182/blood.2019000758

TOP Treatment



Coleman EA, Coon S, Hall-Barrow J, Richards K, Gaylor D, Stewart B. Feasibility of exercise during treatment for multiple myeloma. *Cancer Nurs*. 2003;26(5):410-419. doi:10.1097/00002820-200310000-00012

Bartels FR, Smith NS, Gørløv JS, et al. Optimized patient-trajectory for patients undergoing treatment with high-dose chemotherapy and autologous stem cell transplantation. *Acta Oncol*. 2015;54:750–758

Next Steps…

- Working towards establishing TOP as a multi-disciplinary clinic with a collaborative approach
- Standardization of TOP in the BMT patient journey
- Early referral to therapy services and subsequent adherence to prospective surveillance model

Questions?

Macy Hogan, PT, DPT
macy.hogan@franciscanalliance.org

References

1. Barnes CA, Stout NL, Varghese TK Jr, et al. Clinically Integrated Physical Therapist Practice in Cancer Care: A New Comprehensive Approach. Phys Ther. 2020;100(3):543-553. doi:10.1093/ptj/pzz169
2. Ethun, C.G., Bilen, M.A., Jani, A.B., Maithel, S.K., Ogan, K. and Master, V.A. (2017), Frailty and cancer: Implications for oncology surgery, medical oncology, and radiation oncology. CA: A Cancer Journal for Clinicians, 67: 362-377. https://doi.org/10.3322/caac.21406
3. Klepin HD, Geiger AM, Tooze JA, et al. Geriatric assessment predicts survival for older adults receiving induction chemotherapy for acute myelogenous leukemia. Blood. 2013;121(21):4287-4294. doi:10.1182/blood-2012-12-471680
4. Gregory A. Abel,Heidi D. Klepin, Frailty and the management of hematologic malignancies, Blood, 2018, Figure 1.
5. Fritz, Stacy PT, PhD1; Lusardi, Michelle PT, PhD2. White Paper: "Walking Speed: the Sixth Vital Sign". Journal of Geriatric Physical Therapy 32(2):p 2-5,
6. Liu, M. A., DuMontier, C., Murillo, A., Hshieh, T. T., Bean, J. F., Soiffer, R. J., Stone, R. M., Abel, G. A., & Driver, J. A. (2019). Gait speed, grip strength, and clinical outcomes in older patients with hematologic malignancies. *Blood*, *134*(4), 374–382. https://doi.org/10.1182/blood.2019000758
7. Coleman EA, Coon S, Hall-Barrow J, Richards K, Gaylor D, Stewart B. Feasibility of exercise during treatment for multiple myeloma. *Cancer Nurs*. 2003;26(5):410-419. doi:10.1097/00002820-200310000-00012
8. Bartels FR, Smith NS, Gørløv JS, et al. Optimized patient-trajectory for patients undergoing treatment with high-dose chemotherapy and autologous stem cell transplantation. *Acta Oncol*. 2015;54:750–758.