

88% white) with MCI received the PrecivityAD blood-based biomarker test. The mean APS was 31 (range 0-91): 13 patients had low scores (APS 0-35), 2 had high scores (58-100) and 3 had intermediate (inconclusive) scores (APS 36-57). The mean probability of Alzheimer's disease (AD) diagnosis was rated by clinicians as 63% (range 25-80) pre-test and 31% post-test (range 5-95) ( $p < 0.0005$ ). AD probability rated by clinicians was decreased in 12/13 low APS patients and increased in 2/2 high APS patients. Donepezil was discontinued in 5/8 low APS patients on therapy and initiated in 1/1 high APS patients not on therapy, representing a change in treatment management in 33% (6/18) of study patients. In summary, this blood-based biomarker test showed clinical utility in its association with physician decision-making around diagnostic certainty and drug therapy management in MCI patients.

#### EFFECTIVENESS OF HOME- AND COMMUNITY-BASED SERVICES IN DECREASING HEALTH CARE SERVICE AND EXPENDITURE IN TAIWAN

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**Background** Whether long-term care service use decreases older adults' health care service use and cost has been a strong interest among aging countries, including Taiwan. The current study examined the impact of continuous use of HCBS offered by Taiwan's LTC plan 2.0 on older adults' health service utilization and cost overtime. **Methods** This study used the LTC Plan 2.0 database and the National Health Insurance Plan claim dataset, and included 151,548 clients who had applied for and were evaluated for LTC services for the first time from 2017 through 2019 and continuously used any LTC Plan 2.0 services for six months. Outcome variables were users' health service utilization and health care cost 12 months before and after starting to continuously use HCBS. Latent class analysis and generalized estimating equations were used to investigate the influences of different service use patterns on the changes in physical functions. **Results** Three subgroups of LTC recipients with different use patterns, including home-based personal care (home-based PC) services ( $n = 107324$ , 70.8%), professional care services ( $n = 30466$ , 20.1%), and community care services ( $n = 13794$ , 9.1%) were identified. When compared to care recipients in the community care group, those in the home-based PC group had more emergency room expenditures (1 point/month,  $p < 0.05$ ) but less hospitalization expenditures (38 points/month,  $p < 0.001$ ), while the professional care group had less emergency room and hospitalization expenditures (3 and 138 points/month,  $p < 0.001$ ). **Conclusion** Those receiving professional care and home care services spent less on health care service utilization.

#### EFFECTS OF GLYCINE SUPPLEMENTATION ON MITOCHONDRIAL FUNCTION AND PROTEIN DEGRADATION IN SKELETAL MUSCLE OF OLD MICE

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Glycine is the simplest amino acid and it has a pivotal role in different metabolic processes, such as being a building block of glutathione, collagen and purine bases, or taking part in methylation reactions, detoxication and ammonia metabolism. Although considered for many years a non-essential amino acid, glycine levels are decreased in certain conditions, as the endogenous synthesis cannot fulfill the needs required to sustain all the cellular processes in which glycine is involved. Here we describe that glycine levels are significantly lower in skeletal muscle of aged zebrafish and mice and in plasma of humans compared to young subjects. We therefore fed healthy old mice for 6 weeks with a glycine-supplemented diet and observed a significant restoration of glycine levels in skeletal muscle and liver towards young mouse levels. Moreover, old mice showed decreased mitochondrial function in glycolytic and oxidative fibers, and a significant increase in oxygen consumption was observed in glycolytic fibers after glycine supplementation. The improvement of mitochondrial function is not associated to an increased mitochondrial biogenesis or an increased antioxidant capacity, but glycine supplementation increases both total GSH and GSSG levels, suggestive of a pro-oxidant environment. Overall, glycine supplementation induced an increase in the cross-sectional area of fibers. Finally, we carried out RNA-Seq study to decipher the impact of higher glycine intake. Our results suggest that age-associated glycine deficiency plays an important role in atrophy of muscle, especially in glycolytic fibers, and is reversible with a dietary supplementation.

#### EFFECTS OF RELATIONSHIP TYPE ON QUALITY OF LIFE IN OLDER ADULTS WITH COGNITIVE IMPAIRMENT AND THE INFORMAL CAREGIVERS

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**Purpose:** The purpose of this study was to assess whether there was an association between care-recipient relationship type and the QoL of older adults and their informal caregivers, and whether this association pertained to older adults' cognitive function. **Methods:** This was a secondary data analysis. Older adults ( $n=1230$ ) and their informal caregivers ( $n=1871$ ) were identified from participants in the National Health and Aging Trends Study (NHATS) Round 5 and the National Study of Caregiving (NSOC) II. A series of bivariate and multivariable regression models examined the associations among the care-recipient relationship type and QoL in older adults and their informal caregivers, adjusted for socio-demographic variables as well as cognitive functioning. **Results:** Both older adults and caregivers'