

## **With Type 2 Diabetes Tai Chi Improves Memory and Sleep in Older Adults**

Researchers investigated whether Tai Chi can enhance the cognitive functioning of older adults with [type 2 diabetes](#) compared to that achieved through usual care or fitness walking.

After 12 weeks, Tai Chi significantly improved sleep quality and cognitive performance compared to usual care or [fitness walking](#), demonstrating its effectiveness for older adults with diabetes.



### **Study**

In this study, researchers used a [randomized controlled trial](#) (RCT) to compare the effects of Tai Chi and fitness walking on cognitive function in older adults with the condition. The study also aimed to explore underlying mechanisms, focusing on physical activity levels and sleep patterns.

The RCT assigned participants in a 1:1:1 ratio to one of three groups: Usual care, fitness walking, or Tai Chi. The study was approved by institutional review boards and registered with the [Chinese Clinical Trial Registry](#).

Eligible participants were adults aged 60 or older who had been diagnosed with type 2 diabetes mellitus for one to five years, with hemoglobin A1c (HbA1c) levels of 6.5% or more, and mild cognitive impairment without [dementia](#). Exclusion criteria included amputations, severe retinopathy, dialysis, malignant hypertension, or gait instability.

The interventions lasted 12 weeks. The usual care group received standard [diabetes education](#), while the fitness walking group participated in supervised treadmill sessions three times a week for one hour.

The Tai Chi group practiced 24-form Simplified Tai Chi via live video guidance, three times per week for a total of 30 minutes, which included 5 minutes each for warm-up and cool-down. To ensure a fair comparison, [exercise](#) intensities for both groups were matched to moderate-intensity physical activity levels and monitored through heart rate, with a target zone of 65% to 75% of each participant's maximum heart rate.

All participants underwent [continuous glucose monitoring](#) (CGM) using Guardian Sensors 3, which were worn on the upper arm, and wore bracelets to track steps, heart rate, and sleep quality. The primary outcome was cognitive performance assessed by the Montreal Cognitive Assessment (MoCA) at baseline and 12 weeks.

Secondary outcomes included [memory](#), attention, executive function, sleep parameters, metabolic indices, and quality of life measures. Data were analyzed under intention-to-treat principles.

## **Results**

A total of 203 individuals were initially assessed, with 162 participants randomized equally into three groups: usual care, fitness walking, or Tai Chi. Ultimately, 153 participants completed the 12-week intervention. Baseline characteristics, including age, sex, education, and [health factors](#), were well-balanced across groups.

Adherence was high in both exercise groups, with 83% of the walking group and 80% of the Tai Chi group completing at least 70% of scheduled sessions. The interventions proved very safe, as no serious adverse events occurred, aside from three cases of minor [musculoskeletal](#) discomfort (one in the walking group and two in the Tai Chi group).

For the [primary outcome](#), Tai Chi significantly improved MoCA scores compared with usual care and fitness walking, with large effect sizes, specifically a Cohen's d of 0.98 when comparing Tai Chi to usual care. Walking showed modest but nonsignificant gains in MoCA.

Regarding secondary outcomes, Tai Chi led to greater improvements than both other groups in several areas. For example, participants in Tai Chi showed significant gains in their Wechsler Memory Quotient (WMQ) scores. They completed the Trail Making Test Part B, a measure of mental flexibility, much faster than the other groups. Tai Chi also improved attention, naming ability, delayed recall, and [sleep measures](#), including an average increase of 58 minutes in total sleep time and a 23-minute reduction in time awake after falling asleep. The paper's authors advise, however, that these secondary findings should be interpreted with caution, as they are exploratory and require independent replication to be confirmed.

Tai Chi and walking both lowered fasting glucose and [HbA1c levels](#), but Tai Chi produced broader cognitive and metabolic benefits. Fitness walking outperformed usual care in some areas, including naming ability, HbA1c, fasting glucose, and total sleep time; however, the effects were smaller than those of Tai Chi.

Subgroup analysis suggested Tai Chi was especially beneficial for women, younger participants (age ≤67), those with [lower education](#) or fewer comorbidities, and those with a BMI of 24.00 or less.

## **Conclusion**

This RCT found that Tai Chi produced greater improvements in cognitive function and sleep quality than fitness walking among older adults with type 2 diabetes. Tai Chi participants demonstrated notable improvements in memory, [executive function](#), and overall cognitive function, accompanied by increased total sleep time.

These benefits align with previous research linking Tai Chi to enhanced brain connectivity between regions, such as the medial prefrontal cortex, the hippocampus, and the thalamus, which are associated with memory, attention, and sleep regulation. Improvements in sleep may also indirectly support better cognition. Importantly, the trial highlights the potential of remotely delivered, digitally monitored exercise programs to support [diabetes management](#).

Strengths include the randomized controlled design, objective outcome measures, and integration of [wearable devices](#) for remote monitoring.

However, several limitations must be acknowledged: reliance on participants' digital literacy, a relatively small and geographically limited sample, [unequal exercise](#) durations, short intervention length, and possible bias in self-reported outcomes. Additionally, remote delivery may exclude individuals with limited access to technology.

In conclusion, Tai Chi shows particular promise for enhancing both cognitive and [physical health](#) in older adults with diabetes, though longer and broader studies are needed to confirm these benefits and guide real-world implementation.

**Source**

<https://www.news-medical.net/news/20250917/Tai-chi-improves-memory-and-sleep-in-older-adults-with-type-2-diabetes.aspx>