

The Benefits of Regular Physical Exercises on Independent Orientation and Mobility in Visually Impaired and Deaf-blind Adults

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Most common psychic problems

- ▶ Depression
- ▶ Anguish
- ▶ Tension
- ▶ Difficulty in falling asleep
- ▶ Broken sleep
- ▶ Short sleep length
- ▶ Tiredness

Independent orientation and mobility becomes difficult

- ▶ Self-confidence ↓
- ▶ Power of concentration ↓
- ▶ Self-esteem ↓
- ▶ Self-efficacy ↓
- ▶ Tension in muscles ↑
- ▶ Reactivity ↓
- ▶ Dynamic balance in walking ↓

Interventions

- ▶ 24 participants (31-75 years)
- ▶ In groups of 6-7 subjects
- ▶ Changing rhythm of music
- ▶ Requirements of lighting
- ▶ Requirements of echo level
- ▶ Special instruction methods

KICK



Simultaneously swing the right arm straight up towards 11 o'clock and the left leg straight towards 3-4 o'clock, with the foot at an angle of 90° , then swing the left arm straight up towards one o'clock and the right leg straight towards 8-9 o'clock.

Motivation

- ❑ *The personal assessment of a subject*
- ❑ Weight
- ❑ Blood pressure
- ❑ Flexibility of trunk and upper body
- ❑ Gait analysis

The effect of physical intervention on mental state

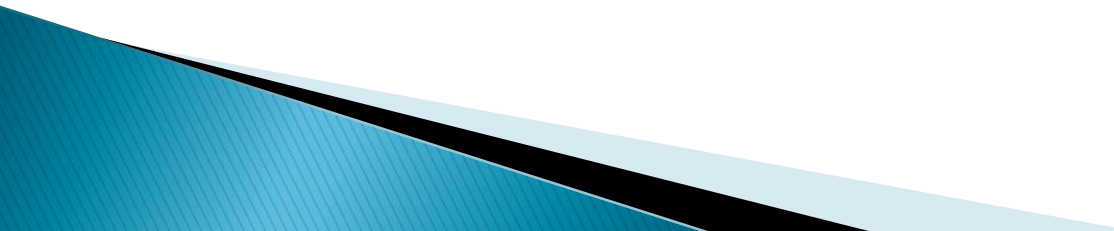
Mental state improved in 21 subjects:

- ❑ "I sleep better"
- ❑ "Dizziness disappeared"
- ❑ "Bracing effect"
- ❑ "My mind feels lighter"

Why physical exercises improved mental state?

- ▶ Diversion from negative thoughts
- ▶ Tension decreased in neck and shoulder muscles
- ▶ Physical condition improved in 22 and balance in 11 subjects
- ▶ Self-confidence and self-efficacy increased
- ▶ Successful mastery of the exercise program
- ▶ Social contacts cheer

Physiological effects of regular physical exercises

- ▶ Enhancement of synthesis and liberation of neurotrophic factors
 - ▶ Enhancement of cognitive functioning, angiogenesis, neurogenesis, neuroplasticity, synaptogenesis neuroprotection
 - ▶ Oxidative stress decreases
 - ▶ Endorphins and monoamines increase
 - ▶ Cortisol decreases
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Conclusion

- ▶ Mental state improved regardless of different backgrounds of subjects.
 - ▶ Motivation for regular physical exercises enhanced.
 - ▶ In the future, interventions of 2-3 months with interim tests.
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