

Yoga and ALS

It's All in the Breathing

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Respiration and ALS

- Most patients experience respiratory decline over their disease course
- Respiratory insufficiency adversely affects QOL in patients and caregivers, caloric balance and longevity
- Respiratory failure is the most common cause of death (Lyall et al, 2000)
- Some patients present with FVC well over 100% predicted
 - These patients have had hobbies that promote good lung function

What is Yoga?

- Yoga is an ancient system of physical, psychological and spiritual balance
- Yoga practices include a variety of:
 - Physical movements (“asanas”)
 - Breathing techniques (“pranayamas”)
 - Awareness and meditation techniques (“dhyanas”)
- This body/mind balance is the basis of health and well-being (Olivo, 2009)

Yoga Breathing Techniques in Health and Disease

➤ Health Benefits

- Anti-inflammatory, anti-stress, antioxidant (Olivo, 2009)
- Enhances well-being, mood, attention, and stress tolerance (Brown/Gerbarg, 2005)

➤ Mechanisms

- Balances autonomic nervous system
- Calms stress response system
- Contributes to neuroendocrine release of hormones (Brown/Gerbarg, 2005)

Yoga Breathing Techniques in Health and Disease

- Studies have shown:
 - Improved pulmonary function/respiration/oxygen saturation in COPD (Pomidori, 2009)
 - Benefits for psychological and stress-related disorders (Brown, 2005)
- No published research on the effects on yoga in ALS

Study Hypothesis


- Teaching patients and caregivers yoga breathing techniques in a clinic setting may:
 - Reduce stress
 - Promote relaxation
 - Maximize lung function
- These effects may improve QOL and increase longevity

Objectives of Study

- To promote yoga breathing patterns in a clinic setting by teaching patients and caregivers yoga breathing techniques to:
 - Reduce stress
 - Promote relaxation
 - Maximize lung function
 - Improve QOL

Yoga Breathing Techniques

The Wave Breath

- Focuses on diaphragmatic breathing:
 - Trains individuals to release abdominal and chest tension that may interfere with complete respiration
 - Strengthens all muscles involved in breathing
 - Increases lung capacity
 - Has a general calming effect
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Seven Color Breath

- Directs awareness to seven energy centers corresponding to major endocrine organs and nerve plexuses
- Represents physical, emotional, psychological, energetic and spiritual aspects of each individual
- Accesses the autonomic nervous system, initiates the relaxation response, and trains individuals in alternate methods of controlling the body

Inclusion Criteria

- Definite or probable ALS
- Age 18 y to 85 y
- Early and intermediate stage of disease as measured by FVC > 75%, no more than 12% drop from sitting to lying
- ALS/FRS-R score ≥ 40
- Availability of caregiver in home
- Willingness to participate

Exclusion Criteria

- Non-invasive ventilation use
- Feeding tube
- Lack of primary caregiver
- Bed bound patients
- Shortness of breath at rest
- Major systemic disease (liver, kidney or lung disease, active cancer)

Protocol

- 15 ALS patients and their primary caregivers will be recruited through Vermont ALS Clinic
- Subjects will be followed for 1 year through ALS Clinic
- Participants will be asked:
 - Current age
 - Smoker/nonsmoker
 - Family hx of ALS, Parkinson's, or Alzheimer's
 - Hx of other major systemic disease
- Patients will be asked Bulbar or spinal onset, age at onset

Protocol

- Baseline and follow up visits for patients will include:
 - Height, weight, blood pressure, pulse, and respiration
 - ALS-FRS R Score
 - FVC sitting and lying, NIF, SNIF
- Both patients and care givers will complete:
 - McGill QOL single item question: How do you rate your quality of life?
 - Stress questionnaire

Protocol

- Certified therapeutic yoga instructor will teach 2 yoga breathing patterns
- Participants will:
 - Practice the breathing patterns for 10 minutes twice a day
 - Keep a log
 - Check in every 2 weeks by phone or email

Protocol

- Follow up visits:
 - 2 weeks, 6 weeks,
 - 12 weeks, 24 weeks,
 - 36 weeks, and 48 weeks
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Summary

- Yoga breathing may be an early intervention in ALS
 - Low cost
 - Non-invasive
- Yoga breathing may:
 - Extend optimal respiratory function
 - Reduce stress
 - Promote relaxation and improve quality of life for both patient and caregiver

References

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