PEG

e

malattie neurodegenerative

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–

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REVIEW

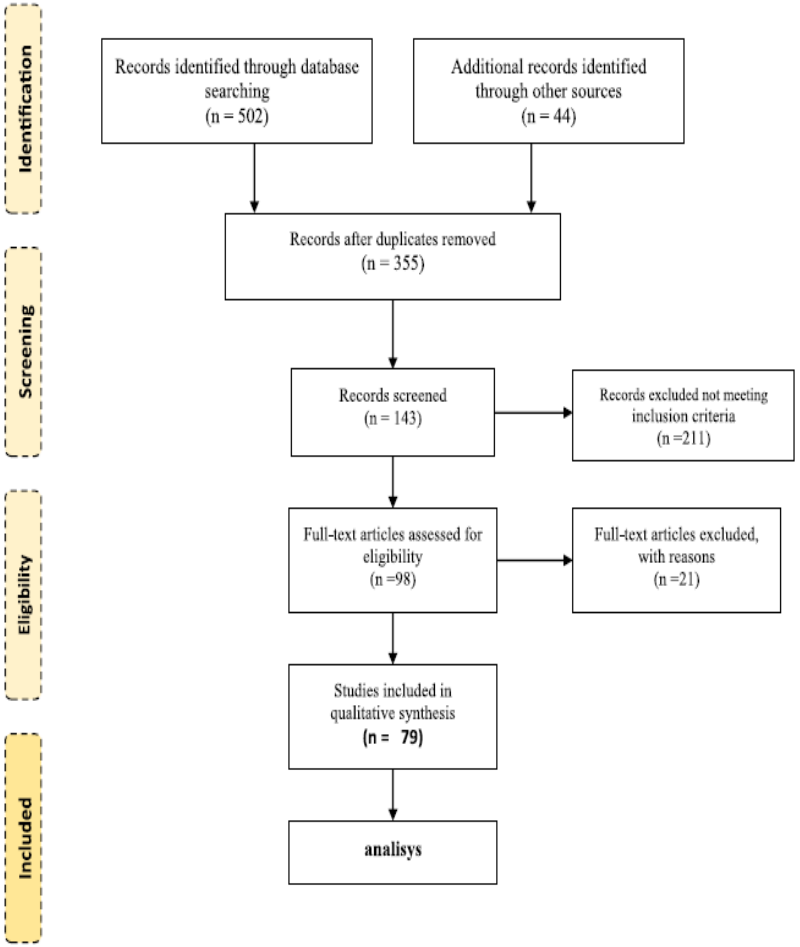
Check for updates

Effect of nutrition on neurodegenerative diseases. A systematic review

Vittorio Emanuele Bianchi [a], Pomares Fredy Herrera[b] and Rizzi Laura[c]

Nutritional Neuroscience 2019

F Flow Diagram: Role of nutrition on neurodegeneration



- 28 studies investigated the correlation between nutrition and neurodegenerative diseases

- The majority of these studies found a beneficial effect of MeDiet improving cognitive impairment in the general population and in AD incidence, and a reduced mortality rate.

- Low adherence to MeDiet and reduced volume of the brain structures investigated (Gu, Neurology 2015)

- Antioxidant intake determined an improvement in physical and respiratory function in ALS (Nieves, Jama Neur 2016)

REVIEW

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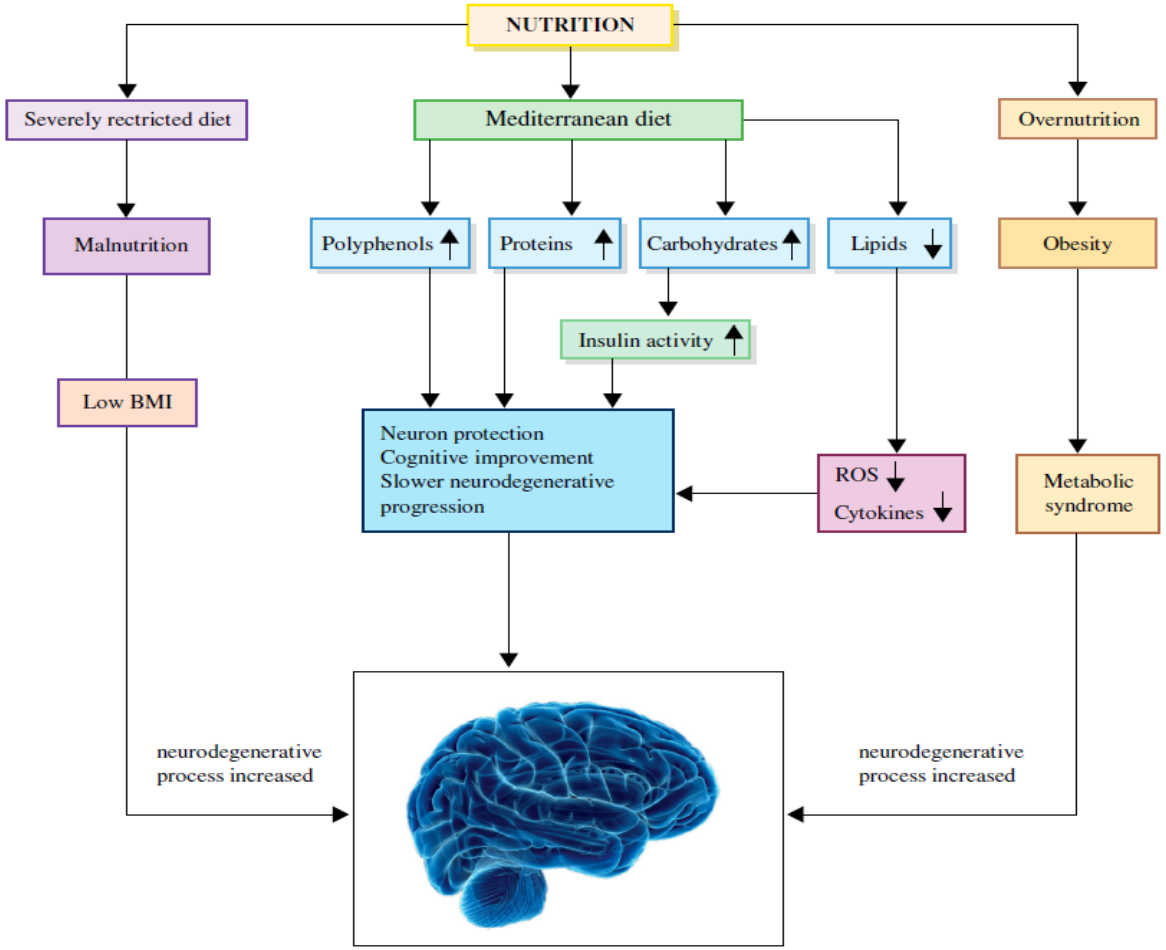
Nutritional Neuroscience 2019

- Supplementation of vitamins: no clear effect
- Supplementation of PUFA: no clear effect



• low BMI increases the neurodegenerative process

• overnutrition can generate obesity and metabolic syndrome, which is also responsible of neurodegeneration due to insulin resistance and inflammatory markers

• Mediterranean diet, due to the polyphenol and flavonoids (fruit, vegetables, olive oil, red wine) plus a regular intake of protein (fish and meets) and carbohydrates (cereals) reduces the insulin resistance and the pro-inflammatory cytokines level determining neuronal protection and slowering neuorodegenerative progression.

Clinical Observations

aspen | LEADING THE SCIENCE AND PRACTICE OF CLINICAL NUTRITION
American Society for Parenteral and Enteral Nutrition

Nutrition Management of Amyotrophic Lateral Sclerosis

Daniel I. Greenwood, BA

Nutrition in Clinical Practice
Volume 28 Number 3
June 2013 392-399

DOI: 10.1177/0884533613476554
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Table 1. Risk Factors for Malnutrition in Amyotrophic Lateral Sclerosis.[1-3,5,7,10,11]

Depression
Difficulty communicating needs
Lack of appetite
Fatigue with eating and extended mealtimes
Sialorrhea (excessive salivation)
Shortness of breath at meals
Difficulty with self-feeding and obtaining/preparing meals
Food or fluid avoidance to prevent needing to use the bathroom
Hypermetabolism
Constipation
Cognitive decline and/or dementia
Dysphagia
Coordinating meals with medications that require a fasted state
Anxiety

- Preventing malnutrition in ALS has a positive impact on survival and quality of life
- Malnutrition exacerbates muscle weakness and impairs respiratory and immune system function
- The American Academy of Neurology recommends a nutrition assessment every 3 months

ALS and malnutrition

- 30% increased risk of death if, at the time of diagnosis, the patient's usual body weight (UBW) was down 5%.

- Each 5% decrease in UBW and unit decrease in usual BMI thereafter was correlated with an adjusted 34% and 24% increased risk of death, respectively

Marin et al. J Neurol Neurosurg Psychiatry. 2011

- A retrospective study conducted on 63 patients with ALS found that >10% weight loss at the time of diagnosis was related to shorter survival (P = .002).

- The authors concluded that premorbid weight loss could be useful in identifying poorer prognosis.

- Patients with a percutaneous endoscopic gastrostomy (PEG) had survival times longer than those without (P = .02)

Limousin et al. J Neur Sci. 2010

Guideline

Thieme

Endoscopic management of enteral tubes in adult patients – Part 1: Definitions and indications. European Society of Gastrointestinal Endoscopy (ESGE) Guideline

ESGE

Endoscopy 2021

- Neurological indications include diseases characterized by neurologically derived dysphagia such as stroke, motor neuron diseases, parkinsonism, cerebral palsy, head trauma, and, in selected cases, early dementia

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ESGE

Endoscopy 2021

4.3.2 Should a natural orifice or a percutaneous access be used?

RECOMMENDATION

ESGE recommends the use of temporary feeding tubes placed through a natural orifice (either nostril) in patients expected to require EN for less than 4 weeks. If it is anticipated that EN will be required for more than 4 weeks, percutaneous access should be considered, depending on the clinical setting.

Strong recommendation, low quality evidence.

Lower risk of dislodgement, fewer treatment failures, higher feeding delivery

ALS and enteral nutrition

- The AAN ALS Practice Parameters suggest PEG placement when there is dysphagia and/or a decline in nutrition status as indicated by a BMI <20 kg/ m2 or a 5%–10% loss from UBW or

- meal time duration over 45 min and repeated aspirations

Miller RG et al. Neurology 1999
Desport JC et al. Amyotroph Lateral Scler. 2005
Burgos R, et al. Clin Nutrition 2018

- Optimizing the timing of placement of a feeding tube is imperative

Thieme

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ESGE

Endoscopy 2021

4.6 Enteral tube feeding in patients with amyotrophic lateral sclerosis

RECOMMENDATION

ESGE recommends an early percutaneous gastrostomy placement in patients with amyotrophic lateral sclerosis (ALS), if weight loss occurs despite oral nutritional support.

Strong recommendation, low quality evidence.

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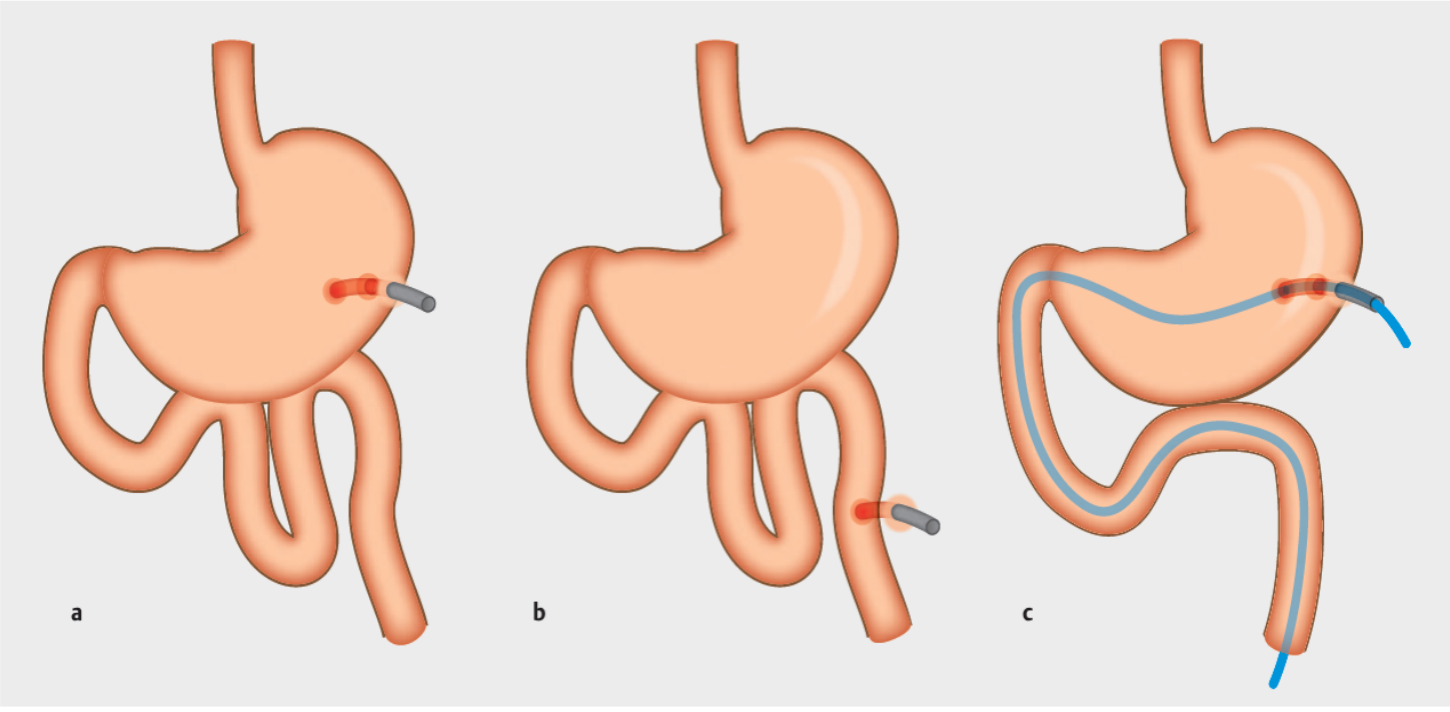

▶ **Fig. 1** Different percutaneous endoscopic accesses for enteral feeding tubes: **a** percutaneous endoscopic gastrostomy (PEG); **b** direct percutaneous endoscopic jejunostomy (D-PEJ); **c** gastric access with a jejunal extension (percutaneous endoscopic gastrostomy with jejunal extension [PEG-J]).

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RECOMMENDATION

ESGE recommends refraining from PEG placement in patients with advanced dementia.

Strong recommendation, low quality evidence.

RECOMMENDATION

ESGE recommends refraining from PEG placement in patients with a life expectancy shorter than 30 days.

Strong recommendation, low quality evidence.

REVIEW ARTICLE *Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration*, 2021

Percutaneous gastrostomy in amyotrophic lateral sclerosis: a review

ANDRÉ CASTANHEIRA[1], MICHAEL SWASH[1,2] & MAMEDE DE CARVALHO[1,3]

This systematic review addresses the role of PEG and other enteral feeding techniques in maintaining ALS patients' survival and quality of life and in identifying prognostic factors for survival, in order to optimize their usefulness

Results -1

- 35 studies were in included in the SR, 15 prospective and 20 retrospective
- PEG increases survival in patients with good prognostic factors (younger age, not malnourished, and without very compromised respiratory function)
- Older age, malnutrition, and poor respiratory function are poor prognostic factors for survival after PEG

Results -2

- The available results do not allow any conclusions regarding effects on patients' quality of life, but a possible negative influence on the caregiver was found, at least shortly after PEG insertion

- The optimum time for PEG insertion and preferences for specific gastrostomy techniques also require more investigation

- Mortality within 30 days after PEG insertion has gradually declined over the period of this analysis, from 2 to 25% to a current mortality rate ranging from 0 to 13%

Guideline

Thieme

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ESGE

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Post procedural management

Consider

- wound infection,
- tube dislodgement,
- buried bumper syndrome