45th ESPEN CONGRESS

EUROPEAN SOCIETY FOR CLINICAL NUTRITION AND METABOLISM

45th ESPEN Congress
on Clinical Nutrition & Metabolism

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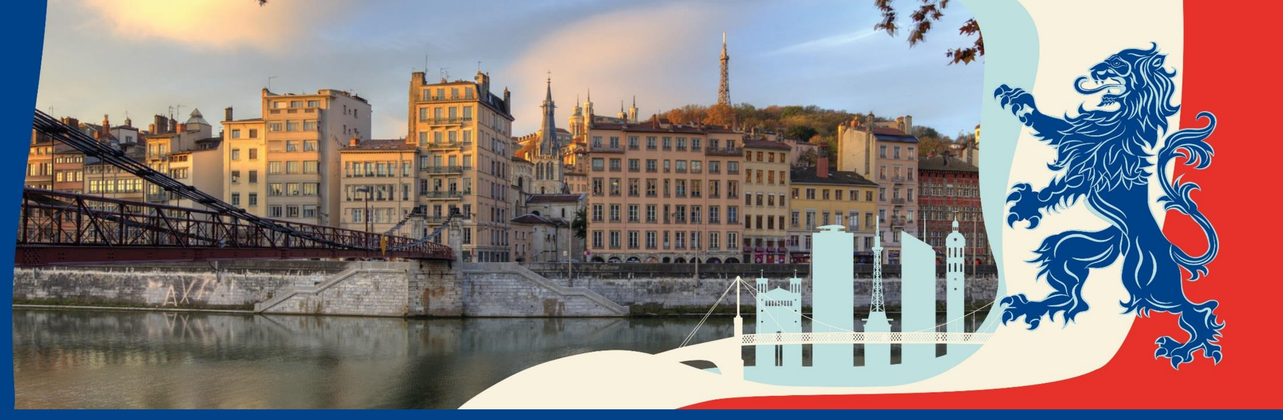
Lyon, France | 11-14 September 2023



Low-intake Dehydration and relation to Nutrition Impact Symptoms in Older Medical Patients –a retrospective cohort study[a]

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INTRODUCTION

Malnutrition and low-intake dehydration both increase complications and mortality in hospitalized older medical patients. Nutrition impact symptoms (NIS) are barriers for obtaining an adequate nutritional intake and possibly adequate fluid.

AIM

The aim was to assess;

- **the prevalence of low-intake dehydration and NIS**
- **the relation between low-intake dehydration and NIS**

METHOD

A retrospective cohort study among older patients (≥65 years) from the medical department at Herlev and Gentofte Hospital and referred to a clinical dietitian.

The following variables were collected:

- **Sex, age, BMI, prevalence of nutritional risk (NRS-2002).**
- **low-intake dehydration (≥295 mosm/L, osmolarity=1.86 x (Na^+ +K^+) +1.15 x glucose +urea +14)[b].**
- **NIS (the EATEN-questionnaire, comprising 16 NIS-questions and whether these were respectively present and limiting nutritional intake).**

CONCLUSIONS

NIS and low-intake dehydration are frequent in older patients.

Low-intake dehydration is inversely related with the NIS-present: dry mouth and breathlessness.

Low-intake dehydration is inversely related with the NIS-limiting intake: other pains.

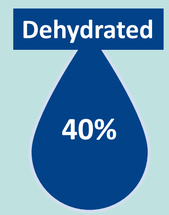
Therefore, it is important to advise patients with NIS, not only to drink water but to focus on drinking energy dense fluids.

RESULTS

We included 99 patients (60% women) (*Table 1*). Low-intake dehydration was found in 40% of the included patients (*Table 1*). The frequency of NIS-present is illustrated in *Figure 1*. The frequency of NIS-limiting intake is illustrated in *Figure 2*.

We found low-intake dehydration to be related to a lower prevalence of the following NIS-present; dry mouth (58% vs.80%, p=0.021), and breathlessness (24% vs. 49%, p=0.018) (*Figure 1*). Among the NIS-limiting intake a lower prevalence of other pains was related to low-intake dehydration (7% vs. 29%, p=0.023) (*Figure 2*).

Table 1. Patient characteristics	All n=99 (100%)	Normo-hydrated n=59 (60%)	Dehydrated n=40 (40%)
Sex, women, n (%)	60 (60%)	40 (40%)	20 (20%)
Age, years, mean (SD)	80.7 ± 7.9	79.1 ± 7.2	83.1 ± 8.3
BMI, kg/m², median (IQR)	22 (20-25)	22 (19 – 25)	22 (20 - 26)
NRS-Risk, ≥3 points, n (%)	60 (74%)	40 (49%)	20 (24%)



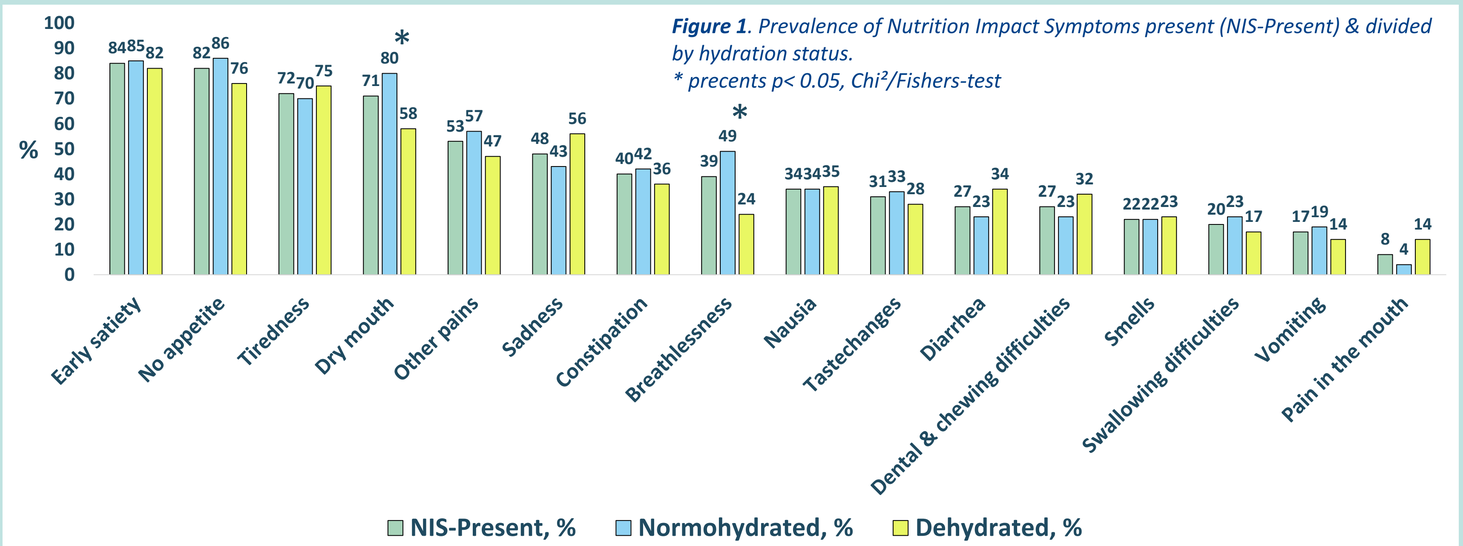


***Figure 1**. Prevalence of Nutrition Impact Symptoms present (NIS-Present) & divided by hydration status.*
** precents p< 0.05, Chi²/Fishers-test*

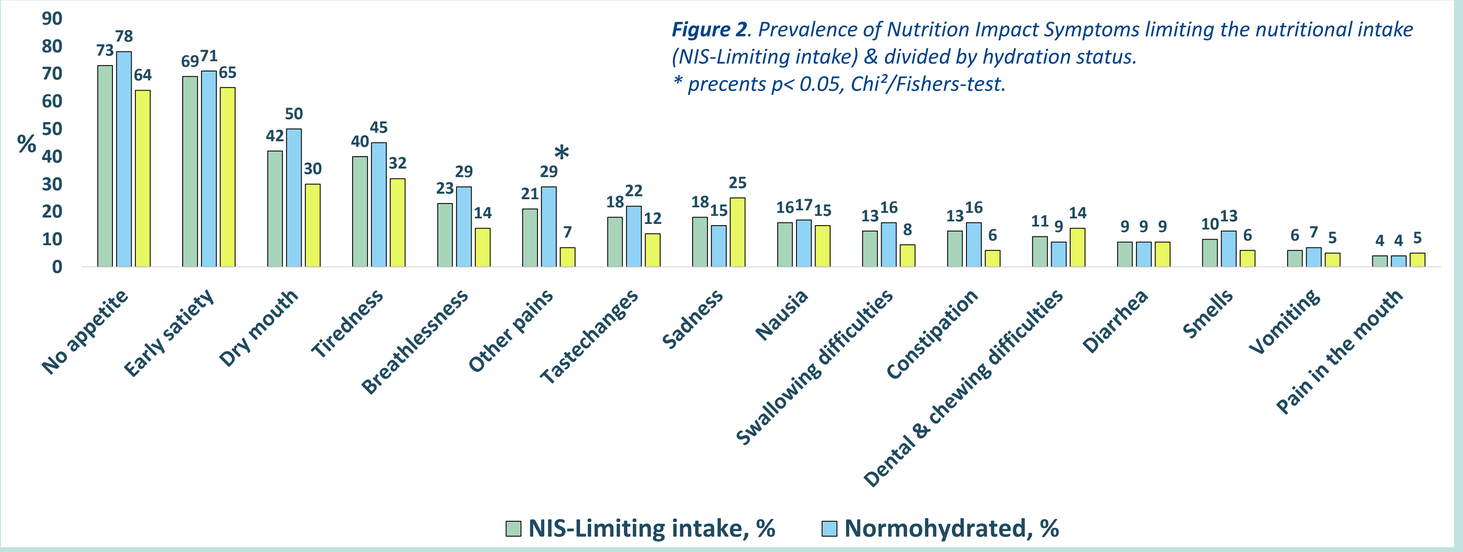


***Figure 2**. Prevalence of Nutrition Impact Symptoms limiting the nutritional intake (NIS-Limiting intake) & divided by hydration status.*
** precents p< 0.05, Chi²/Fishers-test.*

REFERENCES

[a] Jespersen JB, Beck AM, Jensen HO, Munk T, Knudsen AW. Low-intake Dehydration and Nutrition Impact Symptoms in older medical patients – a retrospective study. *Clin Nutr ESPEN*. 2023;57:190-196. doi:https://doi.org/10.1016/j.clnesp.2023.06.030

[b] Volkert D, Beck AM, Cederholm T, et al. ESPEN guideline on clinical nutrition and hydration in geriatrics. *Clin Nutr*. 2019;38(1):10-47. doi:10.1016/j.clnu.2018.05.024

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