

# Energy intake and effects on swallowing function of institutionalized elderly consuming a texture-modified diets in three types of production. **ABADIA study**

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## INTRODUCTION

- Puréed texture-modified diet (TMD) is commonly supplied to elderly people with swallowing and chewing disorders. Its usage is associated with suboptimal nutritional intake, undernutrition, dehydration and pulmonary complications<sup>1-3</sup>. TMD-based on nutrient-dense commercial food products for dysphagia (Meritene® Puré Instant) could increase caloric intake.

## OBJECTIVE

- To describe the nutritional value and the effects on swallowing of 3 types of TMD: In-home produced pureed food (h-TMD); and Meritene® Puré Instant, hand blended (CSDD); and prepared with the food mixer MixxPro® (CSDD-MixxPro®).

## METHODS

- Observational study performed in 3 nursing homes with 3 types of TMD production: h-TMD, CSDD and CSDD-MixxPro®, respectively.

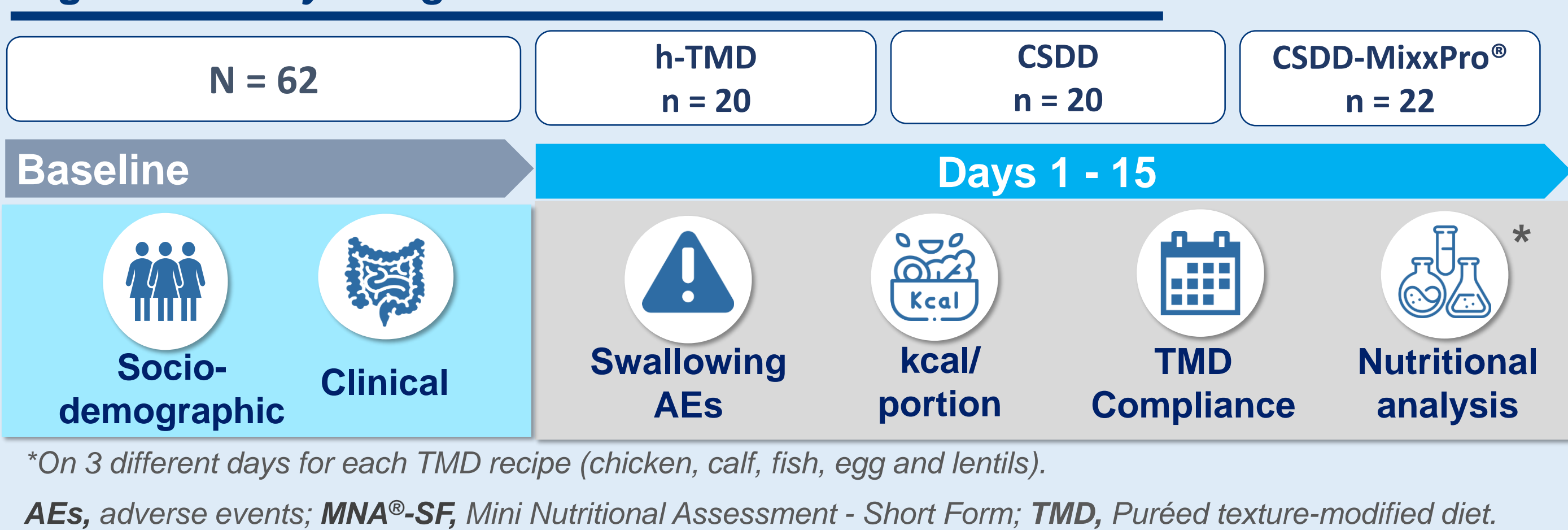
### Variables

- Sociodemographic variables:** age and gender;
- Clinical variables:** MNA®-SF and primary diagnosis for prescribing TMD;
- Swallowing-related adverse events:** coughing during and after ingestion, throat clearing, fractional swallowing and choking;
- TMD compliance:** portion intake (0%/25%/50%/75%/100%);
- Nutritional analysis** was conducted in a certified laboratory.

### Analysis

- Kilocalories (kcal) served** per portion [kcal/100 gr x gr /portion];
- kcal consumed** [kcal/100gr x gr/portion x compliance (%)].

Figure 1. Study design



## RESULTS

- A total of 62 residents were included in the analysis. **Table 1**

Table 1. Baseline characteristics

Age, years; mean (SD)	88.3 (9.3)
Gender, women; %	65.0
<b>Nutritional status, MNA®-SF; %</b>	
MNA®-SF ≥ 12 (normal nutritional status)	3.2
MNA®-SF 8-11 (at risk of malnutrition)	53.2
MNA®-SF ≤ 7 (malnourished)	43.5
<b>Diagnosis for prescribing TMD; %</b>	
Neurologic disease	43.5
Swallowing/chewing disorders	37.1
Others	19.2

MNA®-SF, Mini Nutritional Assessment - Short Form; SD, standard deviation; TMD, Puréed texture-modified diet.

## Swallowing-related adverse events

- Median swallowing-related adverse events reported per intake, h-TMD, CSDD and CSDD-MixxPro®, respectively was: 0.9 (IQR 0.1–1.0), 0.3 (IQR 0.0–0.7) and 0.1 (IQR 0.0–0.1). **Table 2**.

Table 2. Swallowing-related adverse events. Median daily events (IQR)

	Coughing		Throat clearing	Fractional swallowing	Choking	Total
	during ingestion	after ingestion				
<b>h-TMD</b> Median (IQR)	<b>0.00</b> (0.00 - 0.00)	<b>0.00</b> (0.00 - 0.00)	<b>0.00</b> (0.00 - 0.00)	<b>0.93</b> (0.07 - 0.93)	<b>0.00</b> (0.00 - 0.00)	<b>0.93</b> (0.10 - 1.00)
<b>CSDD</b> Median (IQR)	<b>0.03</b> (0.00 - 0.30)	<b>0.00</b> (0.00 - 0.03)	<b>0.00</b> (0.00 - 0.00)	<b>0.00</b> (0.00 - 0.13)	<b>0.00</b> (0.00 - 0.00)	<b>0.30</b> (0.00 - 0.77)
<b>CSDD-MixxPro®</b> Median (IQR)	<b>0.00</b> (0.00 - 0.07)	<b>0.00</b> (0.00 - 0.00)	<b>0.00</b> (0.00 - 0.00)	<b>0.07</b> (0.00 - 0.13)	<b>0.00</b> (0.00 - 0.00)	<b>0.13</b> (0.00 - 0.13)

CSDD, Meritene® Puré Instant -hand blended-; CSDD-MixxPro®, Meritene® Puré Instant -prepared with the food mixer MixxPro®; h-TMD, In-home produced pureed food. IQR, interquartile range.

A mean of 68.7%, 46.0% and 10.3% events per 100 portions were observed, respectively.

## Kilocalories per portion

- Median kcal served per portion h-TMD, CSDD and CSDD-MixxPro® respectively was: 92.4kcal (IQR 75.6-128.1), 323.4kcal (IQR 284.2-454.1) and 358.0kcal (IQR 344.0-372.1). **Figure 2**

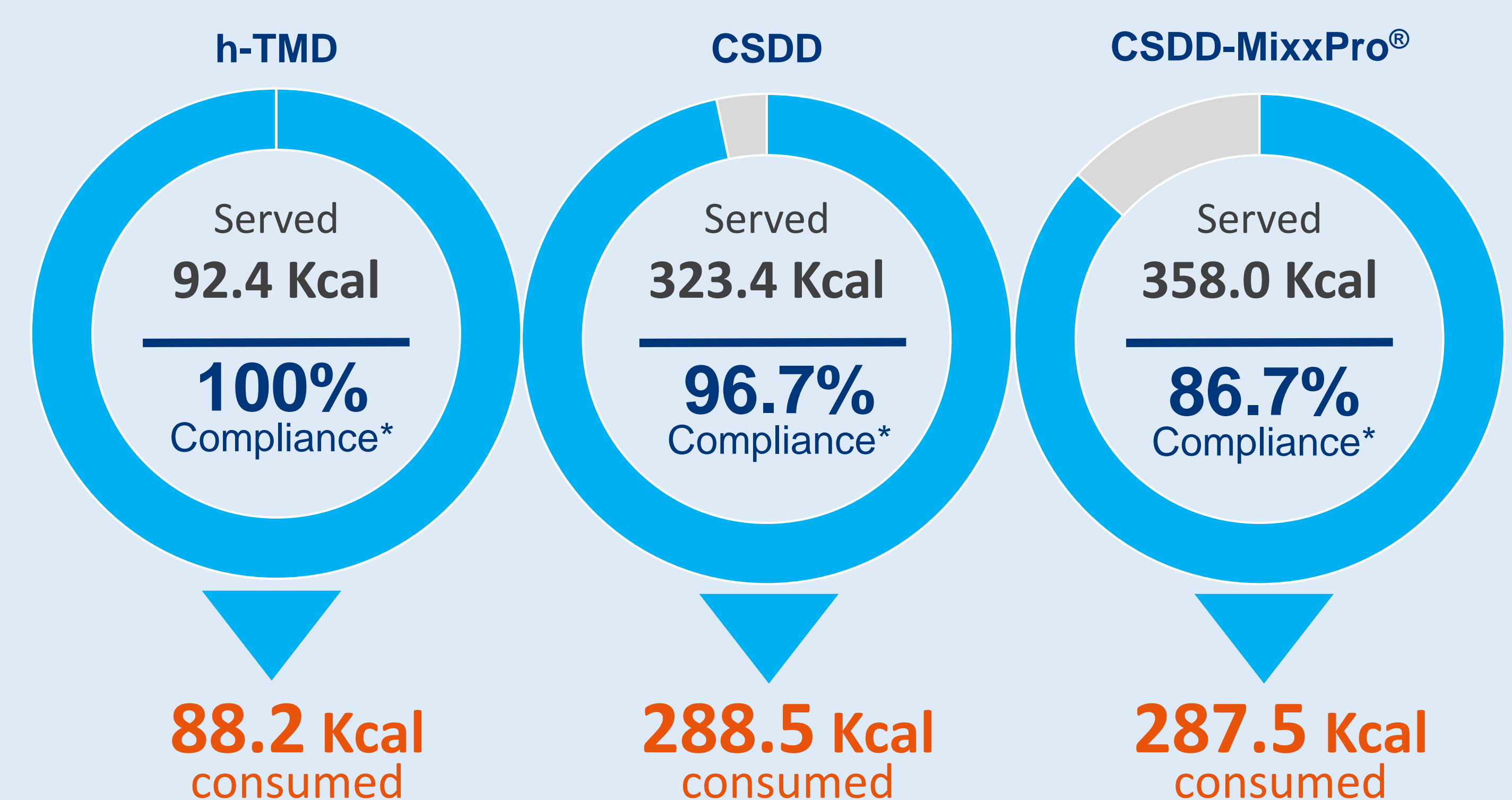
## Kilocalories consumed

- Mean kcal consumed, h-TMD, CSDD and CSDD-MixxPro® respectively, was: 88.2kcal (IQR 72.2-122.3), 288.5kcal (IQR 253.5-325.1) and 287.5kcal (IQR 276.5-298.8). **Figure 2**

## Compliance

- Median TMD compliance, h-TMD, CSDD and CSDD-MixxPro® respectively was: 100.0% (IQR 93.3-100.0), 96.7% (IQR 84.2-100.0) and 86.7% (IQR 70.0-100.0). **Figure 2**

Figure 2. kcal served, consumed and compliance



## CONCLUSIONS

Texture-modified diet based on nutrient-dense commercial food products, particularly prepared with MixxPro®, ensures high intakes of energy and low adverse events on swallowing function.