

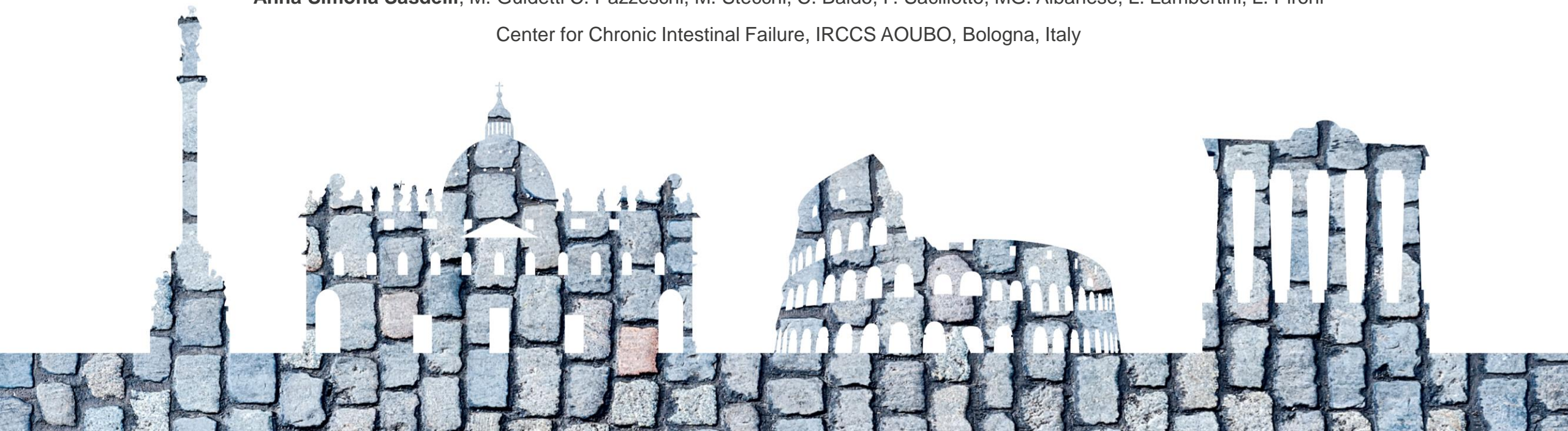
## INCREASE MALNUTRITION AWARENESS: CHALLENGE FOR THE FUTURE

CONGRESSO  
NAZIONALE

Title: **High frequency of TyG index in adult SBS patients weaned from parenteral nutrition**

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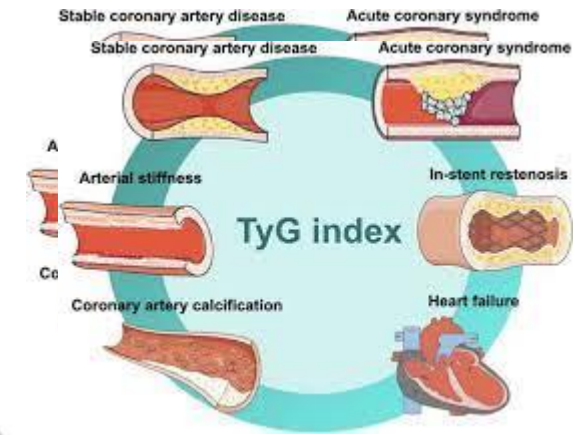
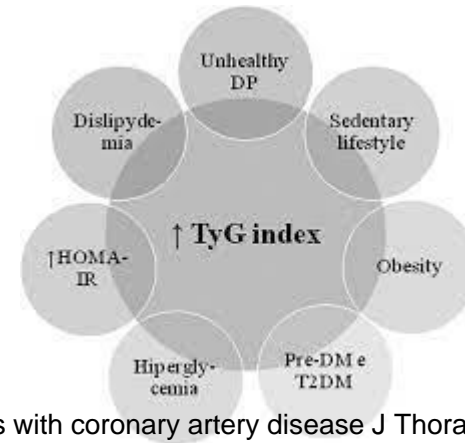
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# Background

Liver steatosis and high blood triglycerides concentration may be both be observed in subjects with short bowel syndrome (SBS) weaned from parenteral nutrition (PN).

In metabolic diseases, high blood triglycerides levels can be related to insulin resistance as assessed by **Triglyceride-glucose (TyG) index**, thus being associated with metabolic syndrome (MetS) and liver steatosis



$$\ln \left( TG \times \frac{FBG}{2} \right)$$

## Bibliografia

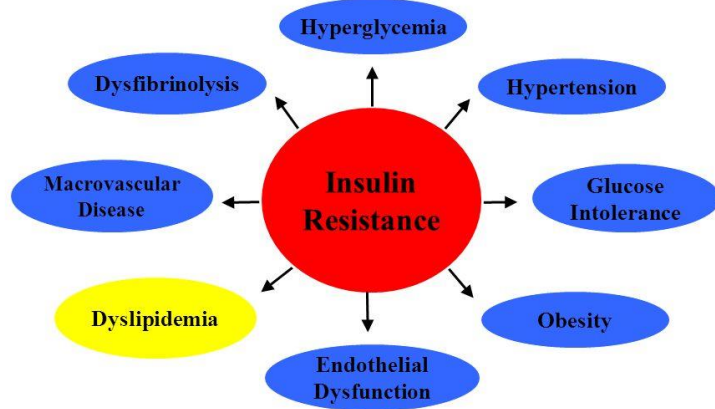
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- Caporusso M. et al. Implicazioni cliniche extraglicemiche dell'insulino-resistenza . L'Endocrinologo (2022) 23:380–385
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# Aim of the study

The aim of this study was to assess Tyg-index in SBS patients weaned from PN and investigate any possible correlation with other features of MetS.

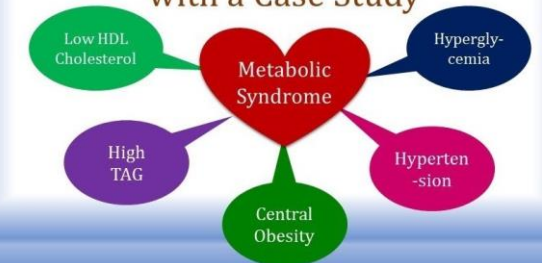
Insulin Resistance: A Core Defect of The Metabolic Syndrome



Adapted from McFarlane SI, et al. *J Clin Endocrinol Metab.* 2001;86:713-718; Reusch JEB. *Am J Cardiol.* 2002;90(suppl):19G-26G.



**Metabolic Syndrome**  
(Insulin Resistance Syndrome)  
with a Case Study



# Methods

- Cross-sectional study on 60 subjects weaned off HPN
- The following were collected:
  - Anthropometric data
  - Metabolic data
  - Oral energy intake
  - TyG index
  - HOMA-IR index
  - Liver steatosis by ultrasound
- Statistics: data by median(*IQR*), chi-squared test, non parametric test



## HOMA

$$\text{HOMA-IR} = \frac{\text{Glucose (mmol/L)} \times \text{Insulin (mU/L)}}{22.5}$$

Insulin resistance (IR)

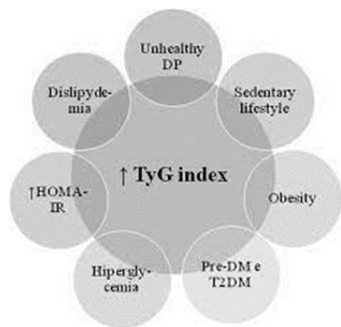
$$\text{HOMA-}\beta = \frac{20 \times \text{Insulin (mU/L)}}{\text{Glucose (mmol/L)} - 3.5}$$

β cell function (β)

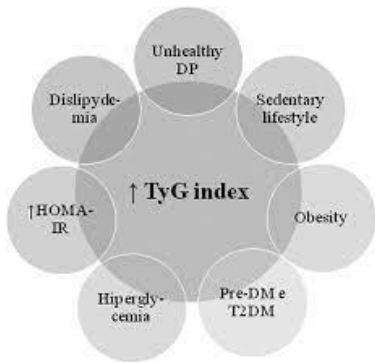
$$\ln \left( \text{TG} \times \frac{\text{FBG}}{2} \right)$$



# Results

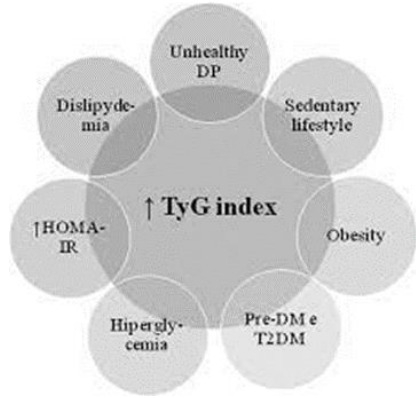


Population: 60 patients  
Female: 58%  
Age: 61.4 (15.6) years



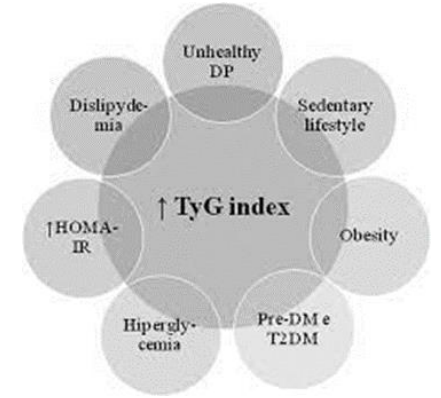
	Median	IQR
BMI (Kg/m <sup>2</sup> )	22.3	5.5
Serum Triglycerides (mg/dL)	125.5	5.5
Total cholesterol (mg/dL)	142.0	70.0
Fasting glucose (mg/dL)	81.5	11.0
Insulin (microU/mL)	5.5	3.8

# Results



Population: 60 patients  
Female: 58%  
Age: 61.4 (15.6) years

	Positive
HOMA -IR	5%
Liver steatosis	36%
High serum triglycerides	37%
High Tyg-Index	70%



# Results

## Correlations between highTyg-index and characteristics of SBS

	Duration of SBS	Duration of HPN	Duration of weaning	Remannt Bowel lenght	Restoration of intestinal continuity
High Tyg index	0.07	0.07	0.22	0.73	0.08

# Results

## Correlations between highTyg-index and metabolic features

	BMI	Total cholesterol	Serum Triglycerides	Fasting Glucose	Fasting Insulin	HOMA-IR	Liver statosis
High Tyg index	0.32	0.03	0.26	0.07	0.36	0.30	0.60

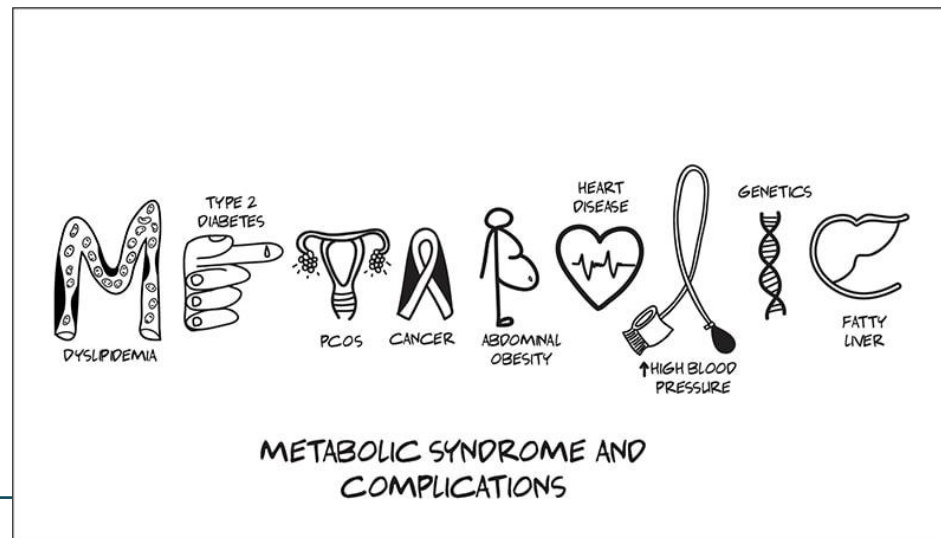
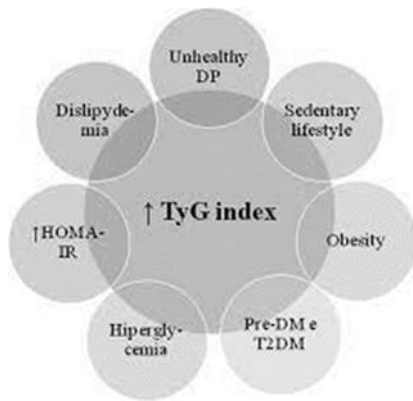


# Conclusions

High TyG index may be present in patients with SBS weaned from PN

It seems independent from the other features of Mets

Further research is necessary to describe the underlying mechanism and the clinical implications of high TyG-index in SBS subjects weaned from PN



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