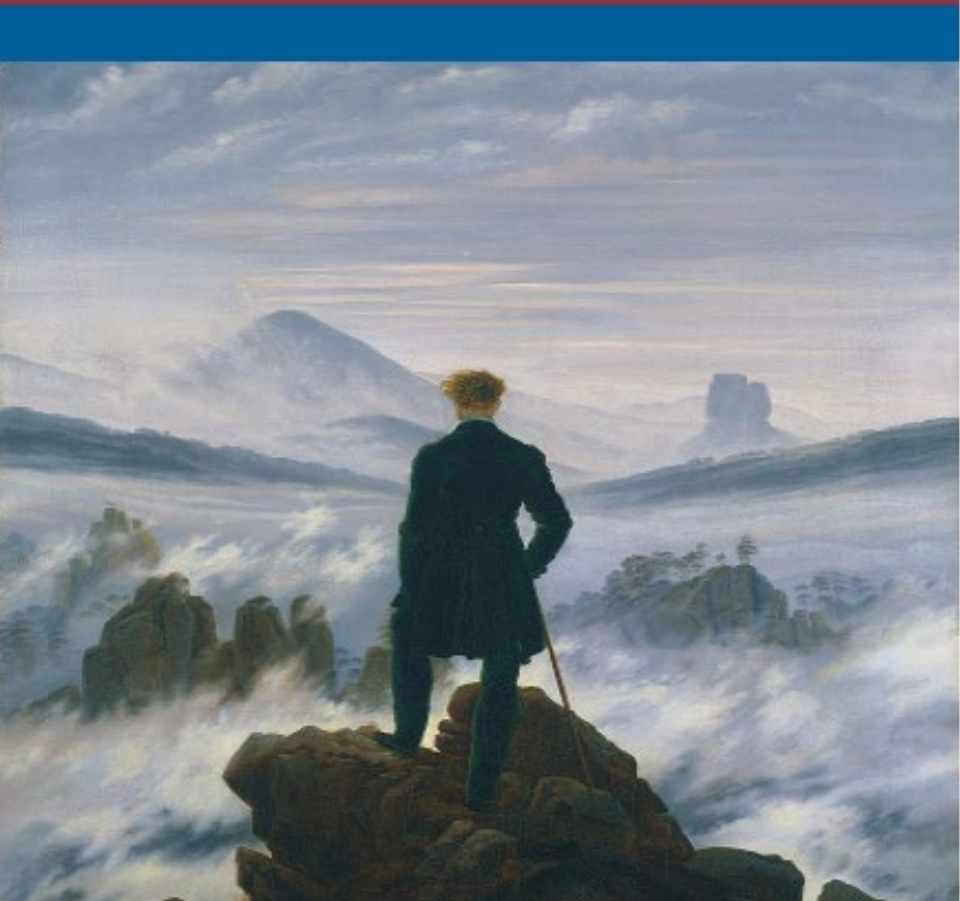


Congresso Regionale SID - AMD Umbria 2022

**CENT'ANNI DI DIABETOLOGIA:
UNA SCIENZA IN CONTINUA EVOLUZIONE**

*Assisi, BV Grand Hotel Assisi
18 /19 novembre 2022*



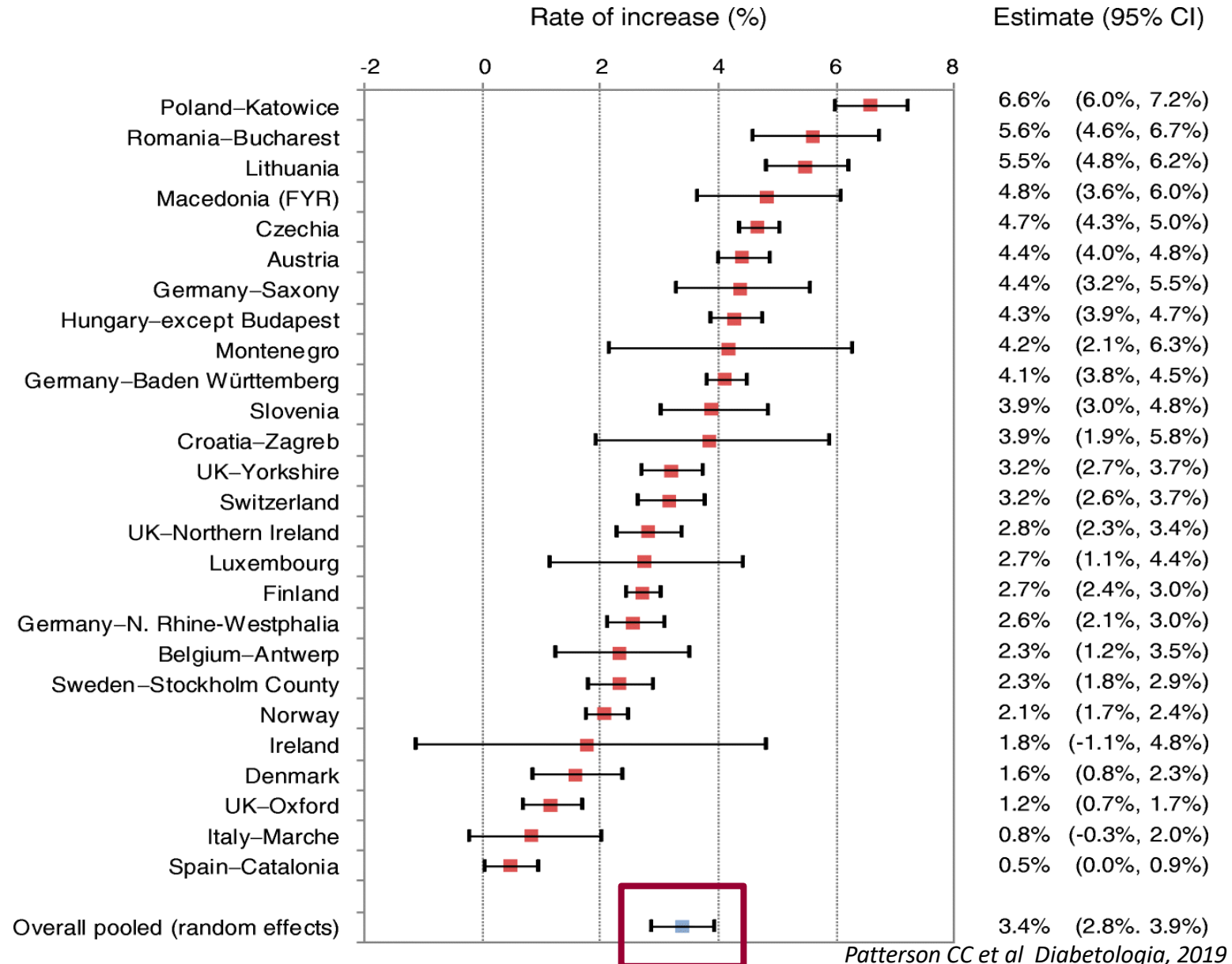
Gli obiettivi della cura: dalla famiglia come paziente alla persona protagonista della cura

Elisabetta Torlone

*SC Endocrinologia e M. Metaboliche
A.O. S. Maria della Misericordia Perugia*

La dott.sa Torlone dichiara che negli ultimi due anni ha avuto finanziamento da Theras

Estimated rates of annual increase in type 1 diabetes in 26 European centres



Critical issues in transition

- Transition occurs at a time when youth with DM1 is undergoing great developmental change and may occur within the context of many other situational changes
- Fear to losing relationships with pediatric providers and forming new relationships with adult providers
- Greater responsibility in care process (*no parental supervision, self-management*)
- Work/school, social, financial demands take precedence over diabetes care
- Barriers to access to health care information (*scheduling appointments, diabetes supplies*)

Poor clinic attendance /discontinuation of care



- Deterioration in glycemic control
- Increased risk of acute complications (*Hypo, DKA*)
- Increased risk of hospitalizations
- Increased risk of unhealthy behaviors (*smoking, alcohol, drug abuse, intentional insulin omission*)

Jacobson AM, J Pediatr 1997
Holmes-Walker DJ, Diabetic Med 2007
Nakhla M, Pediatrics 2009 Tracy EL, Child
Health Care. 2019

Glycemic Control in Youth with Diabetes: The SEARCH for Diabetes in Youth Study



November 2009

Objective

- To assess correlates of glycemic control in a diverse population of children and youth with diabetes.

Study design

- This was a cross-sectional analysis of data from a 6-center US study of diabetes in youth, including 3947 individuals with type 1 diabetes (T1D) and 552 with type 2 diabetes (T2D), using hemoglobin A1c (HbA1c) levels to assess glycemic control.

Results

- HbA1c levels reflecting poor glycemic control ($\text{HbA1c} \geq 9.5\%$) were found in 17% of youth with T1D and in 27% of those with T2D. African-American, American Indian, Hispanic, and Asian/Pacific Islander youth with T1D were significantly more likely to have higher HbA1c levels compared with non-Hispanic white youth (with respective rates for poor glycemic control of 36%, 52%, 27%, and 26% vs 12%). Similarly poor control in these 4 racial/ethnic groups was found in youth with T2D. **Longer duration of diabetes was significantly associated with poorer glycemic control in youth with T1D and T2D.**

Conclusions

- The high percentage of US youth with HbA1c levels above the target value and with poor glycemic control indicates an urgent need for effective treatment strategies to improve metabolic status in youth with diabetes.

Excess mortality and cardiovascular disease in young adults with type 1 diabetes in relation to age at onset: a nationwide, register-based cohort study

27195 T1D and 135178 matched controls

Abstract

Background—We compared individuals with type 1 diabetes (T1D) to matched controls in order to examine how age at diagnosis of T1D relates to excess mortality and cardiovascular (CV) risk.

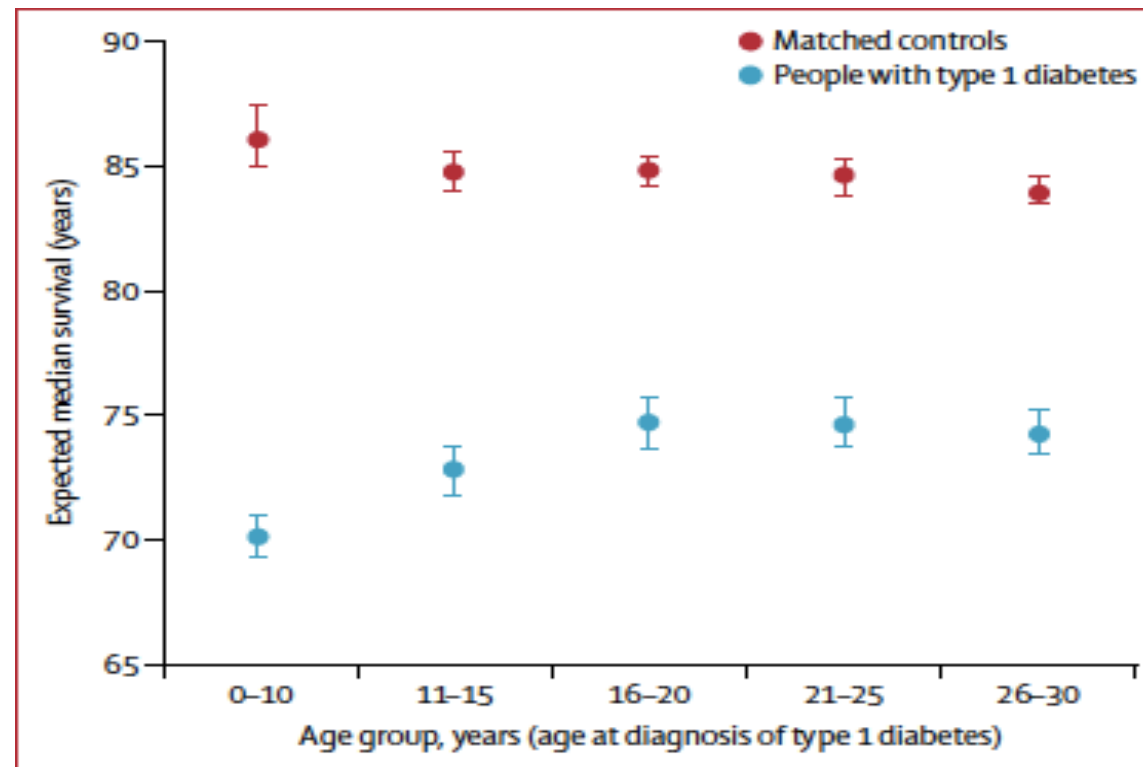
Methods—We studied 27,195 persons with T1D in the Swedish National Diabetes Registry, and 135,178 matched controls from the general population. Using Cox regression, and with adjustment for diabetes duration, we estimated excess risk of all-cause mortality, CV mortality, non-CV mortality, acute myocardial infarction (AMI), stroke, CVD (AMI and stroke), coronary heart disease (CHD), heart failure (HF) and atrial fibrillation (AF). Individuals with T1D were categorized into five groups, according to age at diagnosis: 0–9, 10–14, 15–19, 20–24 and 25–30 years.

In the light of the fact that around half of type 1 diabetes cases are diagnosed before 14 years of age,²⁰ this study highlights a need to consider age at diagnosis in guidelines. The magnitude of these risk estimates – with point estimates approaching 100 in the early adult years – appear at least as high as those conferred by familial hypercholesterolemia.²¹

Excess mortality and cardiovascular disease in young adults with type 1 diabetes in relation to age at onset: a nationwide, register-based cohort study

27195 T1D and 135178 matched controls

Life-years lost in relation to age at onset of type 1 diabetes



Early onset T1D (before 10 y of age) resulted in a loss of 17.7 life-years for women and 14.2 for men.

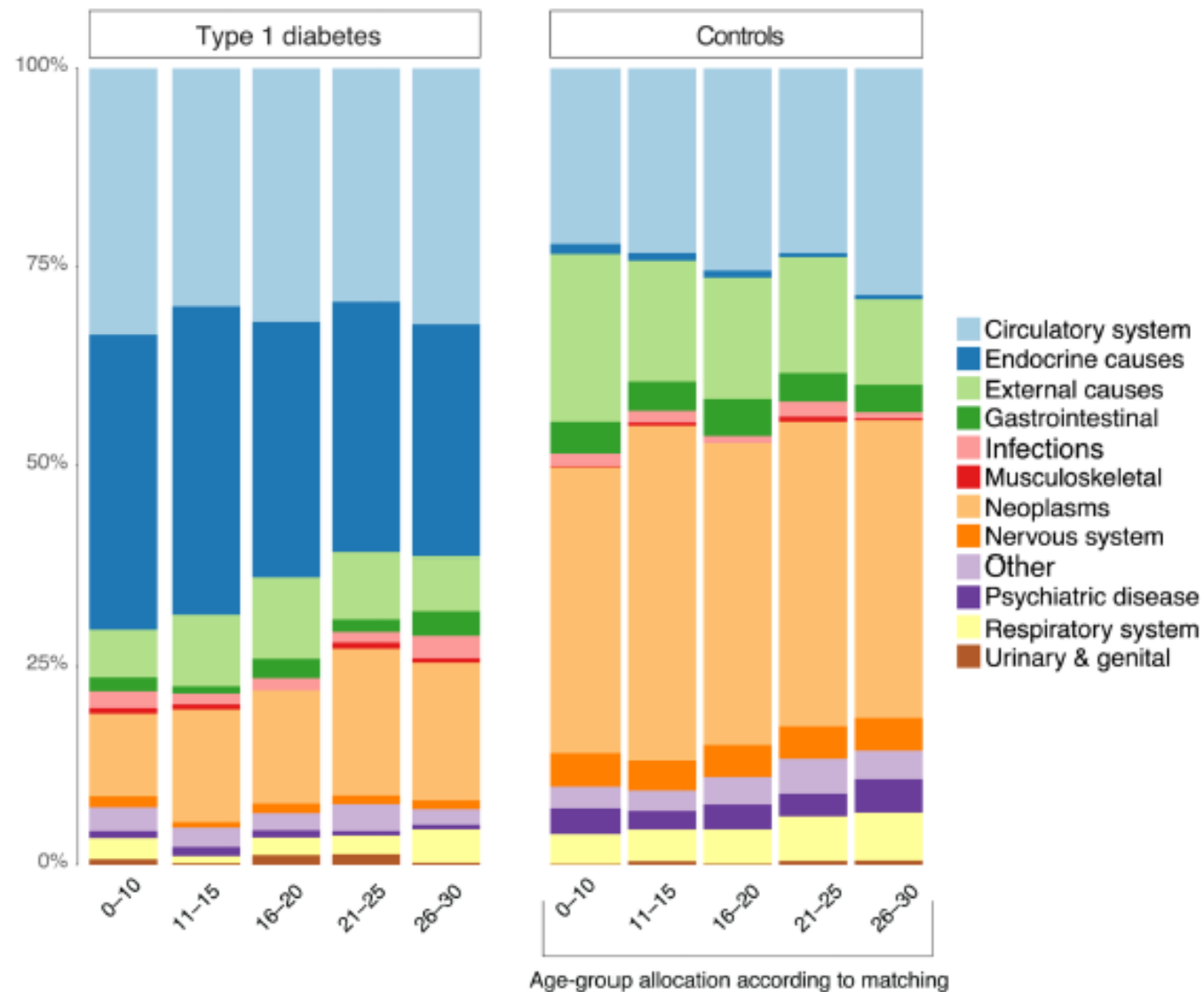


Figure 4. Causes of Death According to Age at Diagnosis of type 1 diabetes

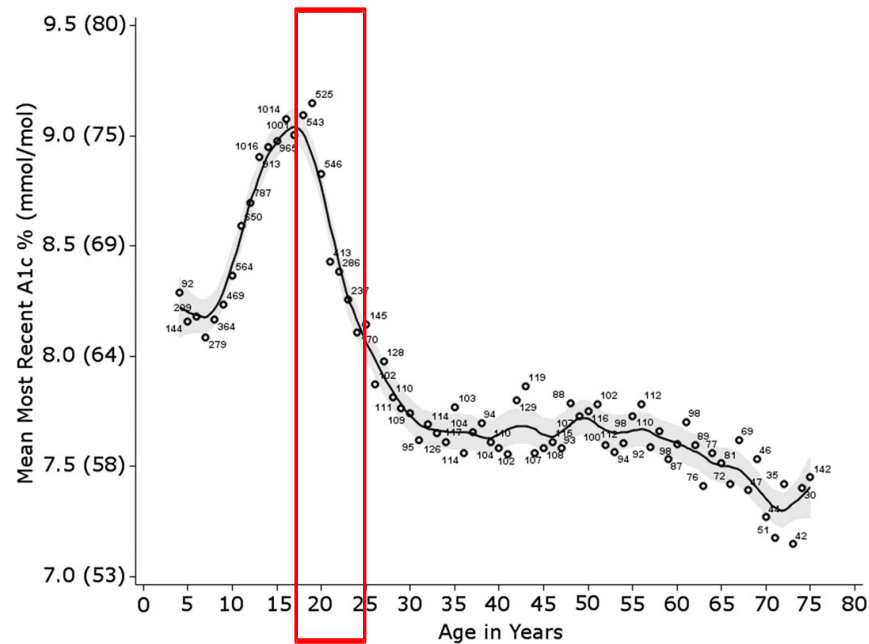
Causes of death according death certificates in the Swedish Cause of Death Registry. Causes of death in the registry are classified according to the International Classification of Diseases (ICD), 10th Revision. Only the primary cause of death was assessed. Hence, cardiovascular disease may be a significant contributor to deaths classified as e.g “Endocrine causes”.

Using gold standard, clamp-derived measures, it has been established that **individuals with type 1 diabetes have a greater degree of insulin resistance than do non-diabetic individuals**. This might be due to insulin receptor downregulation, glucotoxicity, hyperandrogenaemia in females, and increased growth hormone secretion and action.

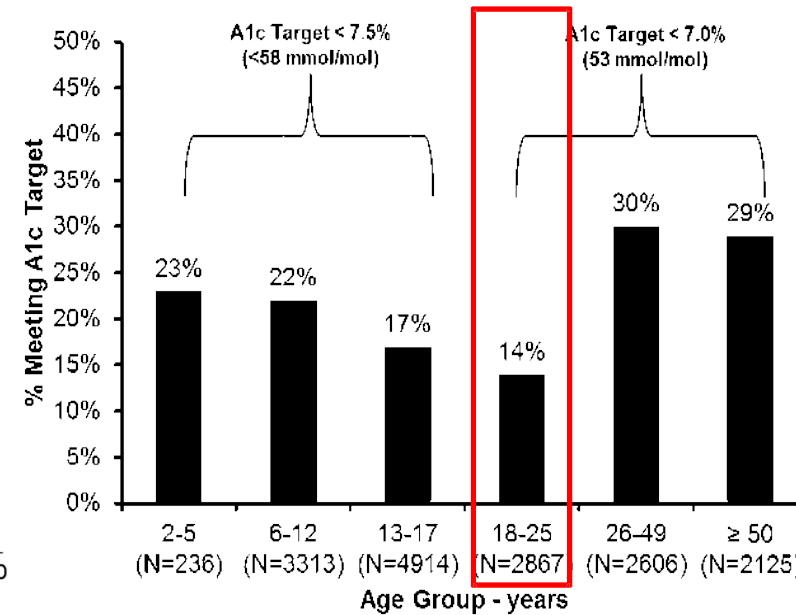
Furthermore, within type 1 diabetes, those with a greater degree of insulin resistance have more coronary artery calcification.

Current State of Type 1 Diabetes Treatment in the U.S.: Updated Data From the T1D Exchange Clinic Registry

Mean HbA1c levels by age



% pts achieving HbA1c target by age group





ORIGINAL RESEARCH

Katharine C Garvey^{1,5}
Margaret G Beste²
Donna Luff^{3,5}
Astrid Atakov-Castillo²
Howard A Wolpert^{2,5}
Marilyn D Ritholz^{4–6}

Experiences of health care transition voiced by young adults with type 1 diabetes: a qualitative study

Objective: This qualitative study aimed to explore the experience of transition from pediatric to adult diabetes care reported by posttransition emerging adults with type 1 diabetes (T1D), with a focus on preparation for the actual transfer in care.

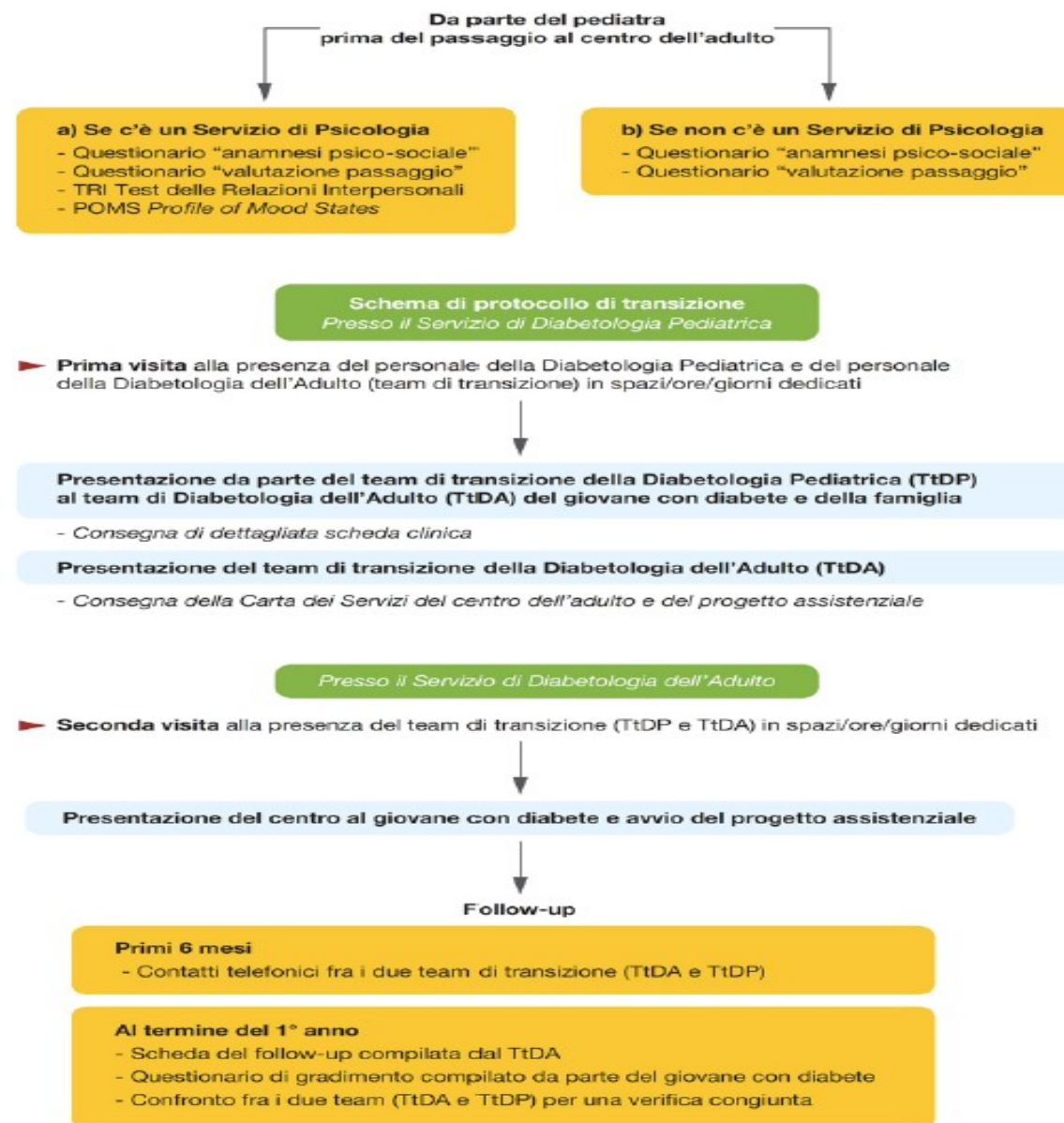
Methods: Twenty-six T1D emerging adults (mean age 26.2±2.5 years) receiving adult diabetes care at a single center participated in five focus groups stratified by two levels of current glycemic control. A multidisciplinary team coded transcripts and conducted thematic analysis.

Results: Four key themes on the process of transfer to adult care emerged from a thematic analysis: 1) nonpurposeful transition (patients reported a lack of transition preparation by pediatric providers for the transfer to adult diabetes care); 2) vulnerability in the college years (patients conveyed periods of loss to follow-up during college and described health risks and diabetes management challenges specific to the college years that were inadequately addressed by pediatric or adult providers); 3) unexpected differences between pediatric and adult health care systems (patients were surprised by the different feel of adult diabetes care, especially with regards to an increased focus on diabetes complications); and 4) patients' wish list for improving the transition process (patients recommended enhanced pediatric transition counseling, implementation of adult clinic orientation programs, and peer support for transitioning patients).

Conclusion: Our findings identify modifiable deficiencies in the T1D transition process and underscore the importance of a planned transition with enhanced preparation by pediatric clinics as well as developmentally tailored patient orientation in the adult clinic setting.

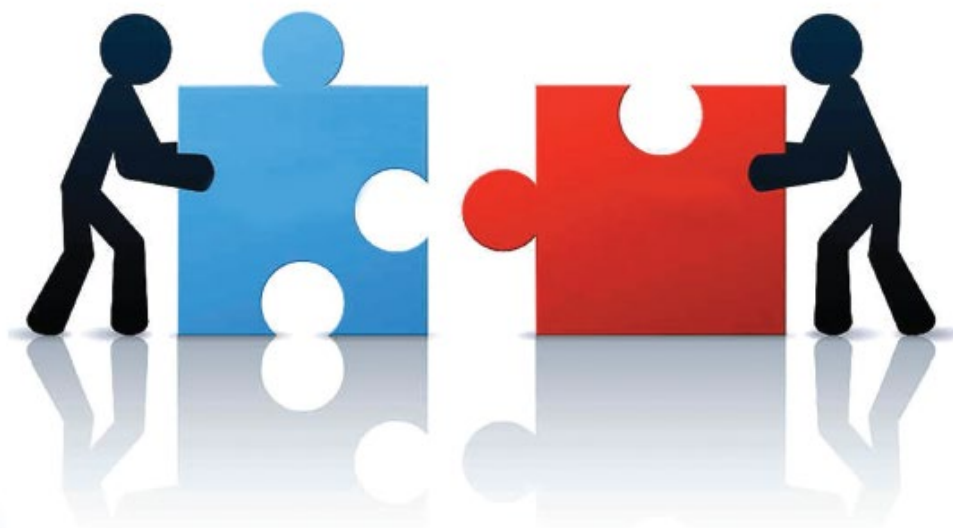
- 1) nonpurposeful transition (patients reported a lack of transition preparation by pediatric providers for the transfer to adult diabetes care);
- 2) vulnerability in the college years (patients conveyed periods of loss to follow-up during college and described health risks and diabetes management challenges specific to the college years that were inadequately addressed by pediatric or adult providers);
- 3) unexpected differences between pediatric and adult health care systems (patients were surprised by the different feel of adult diabetes care, especially with regards to an increased focus on diabetes complications)
- 4) patients' wish list for improving the transition process (patients recommended enhanced pediatric transition counseling, implementation of adult clinic orientation programs, and peer support for transitioning patients).

Transition program by SIEDP-AMD-SID





**PERCORSO DIAGNOSTICO TERAPEUTICO ASSISTENZIALE
PER LA GESTIONE DELLA PERSONA ADULTA
CON DIABETE TIPO 1**



PDTA: Transizione del giovane con diabete dalla diabetologia pediatrica alla diabetologia dell'adulto

Giuliana La Penna / Milena Zanon

Fattori imprescindibili per il passaggio ai servizi dell'adulto sono:

- 1) la stabilizzazione clinica del giovane paziente;
- 2) la sufficiente maturità psicologica del soggetto;
- 3) una buona conoscenza, da parte del paziente della sua malattia e dei trattamenti necessari.

Diverso è anche il contesto del Centro Diabetologico Pediatrico rispetto a quello dell'Adulto. Più informale e centrato sulla famiglia il primo, più formale in termini organizzativi, centrato sull'obiettivo ed enfaticamente le complicanze quello dell'adulto.

L'insieme di questi aspetti, spesso, fa sì che il ragazzo non accetti e/o non sia in grado di gestire il cambiamento e abbandoni la cura del diabete con grave rischio di scompenso metabolico. Dati di letteratura documentano come il 30 % dei ragazzi venga perso al follow-up durante il passaggio.

La transizione dal Centro Diabetologico Pediatrico a quello dell'Adulto quindi deve essere intesa come un processo di accompagnamento del ragazzo al cambiamento e alla maturazione verso l'età adulta, che avviene con tanto più successo quanto più i Centri Diabetologici Pediatrico e dell'Adulto lavorano sinergicamente nel passaggio di cura.

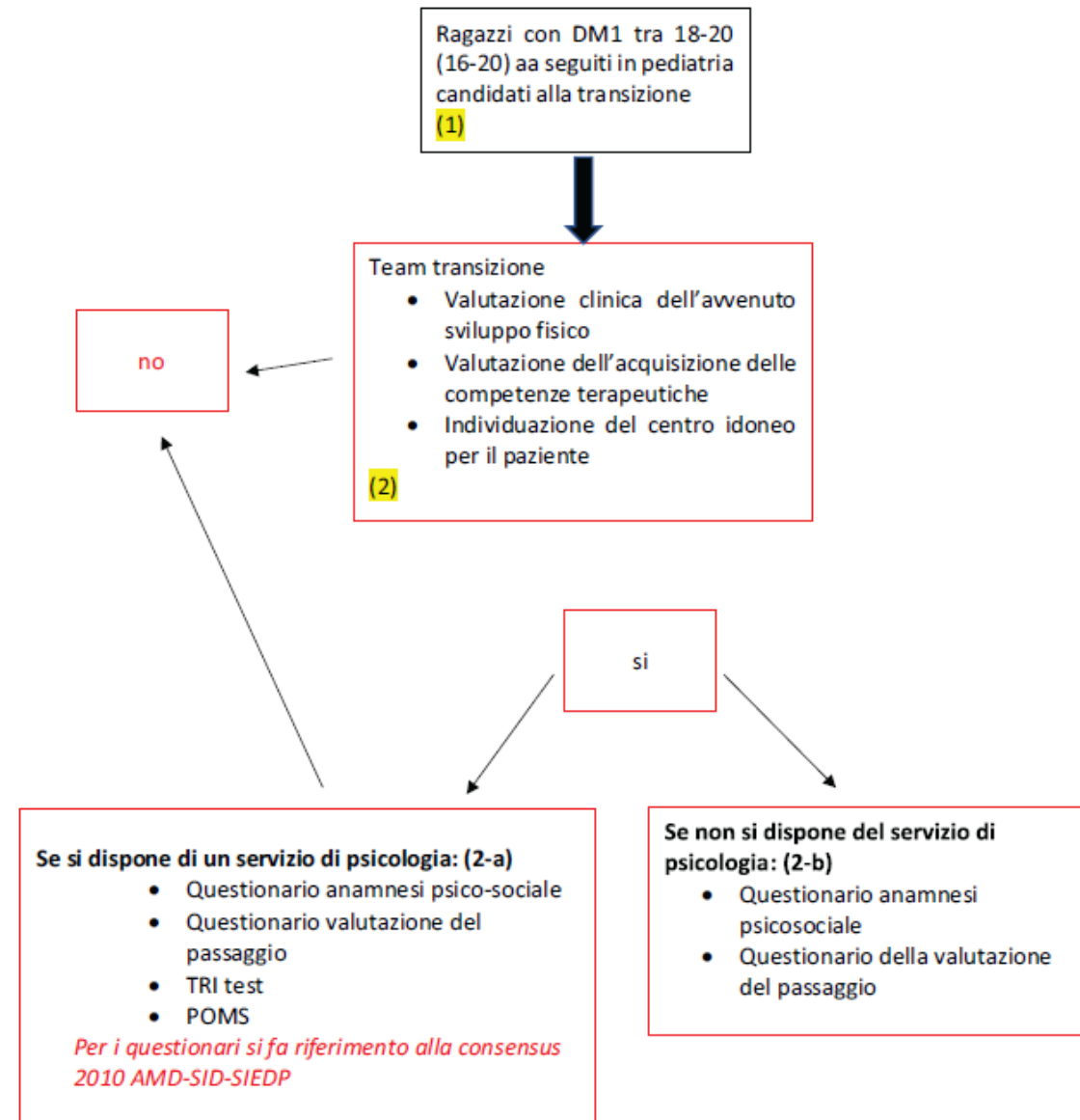
Essa dovrebbe avvenire nel rispetto di alcune tappe:

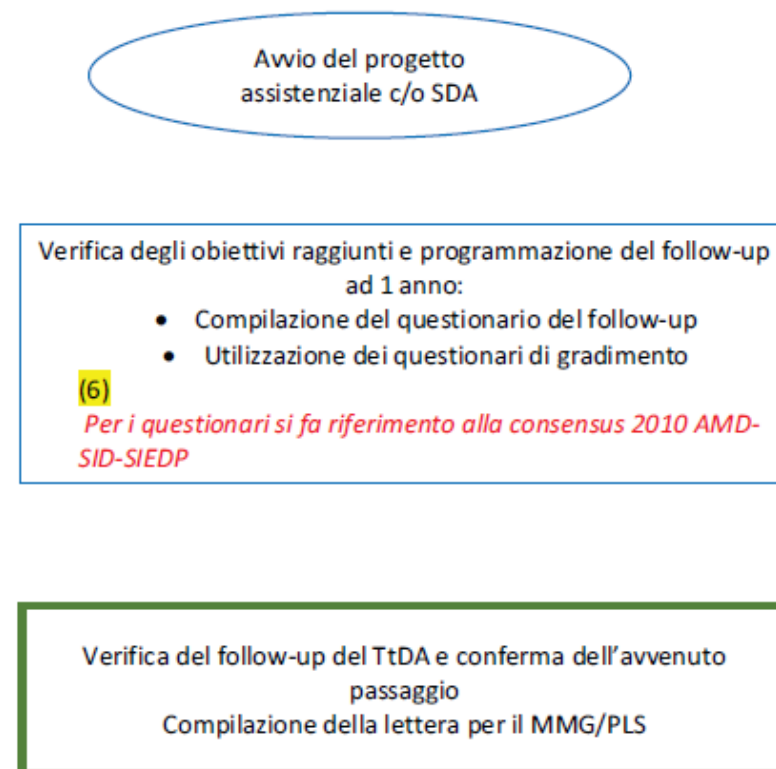
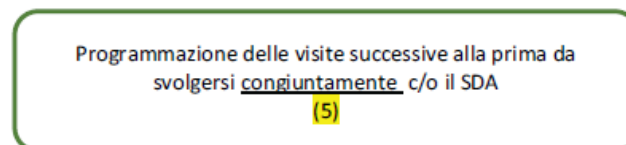
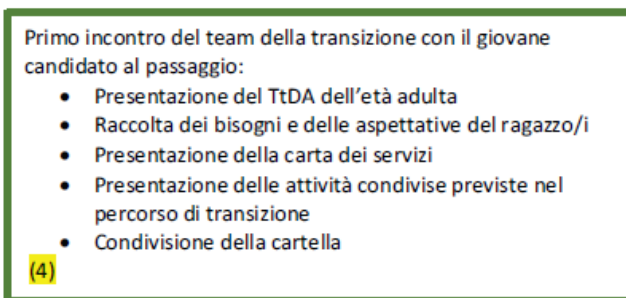
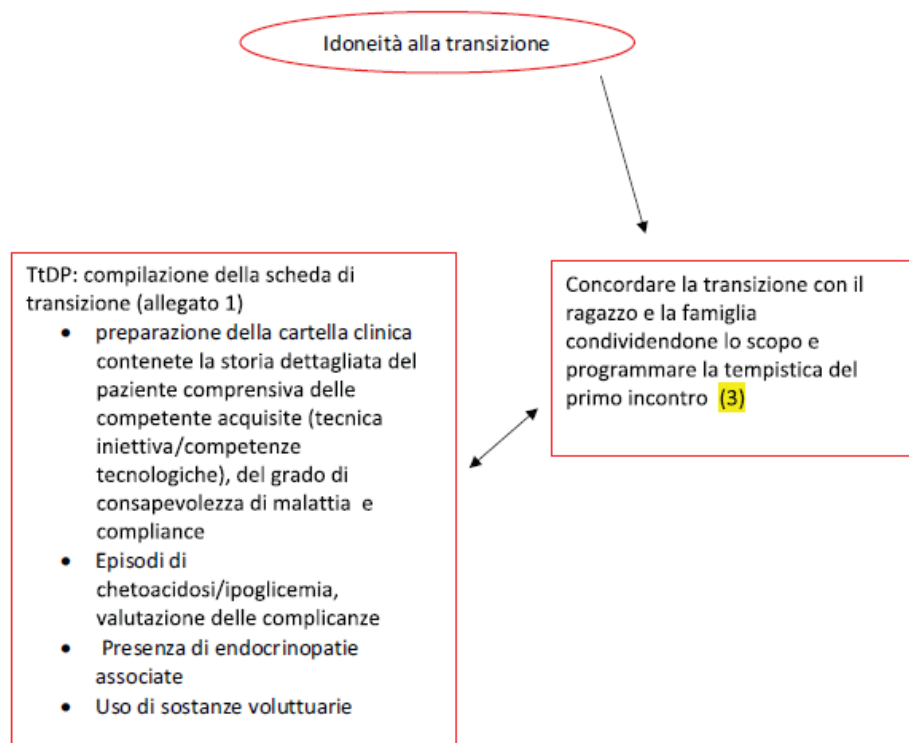
- da parte del Centro Pediatrico una fase di motivazione e di preparazione al cambiamento
- l'individuazione del momento più idoneo alla transizione
- la condivisione con il Centro dell'Adulto degli aspetti clinici.

Il Centro dell'Adulto dal canto suo deve organizzarsi per accogliere il ragazzo tenendo conto della delicata fase del passaggio, deve riconoscerne i bisogni e accompagnarlo al cambiamento.

Diagramma di flusso

Sarebbe auspicabile che tale processo iniziasse almeno due anni prima del passaggio vero e proprio, con una serie di iniziative congiunte tra i due Centri che favorisca la conoscenza reciproca tra il ragazzo e il nuovo team di Cura dell'adulto. Le prime visite dovrebbero esser congiunte tra i due team e il contatto dovrebbe continuare anche a Transizione avvenuta per mantenere un feedback alla struttura pediatrica e garantire la continuità della cura.





Le parti della flowchart contornate in rosso sono di pertinenza pediatrica, quelle in verde sono comuni al team e quelle blu del CDA.

Criticità

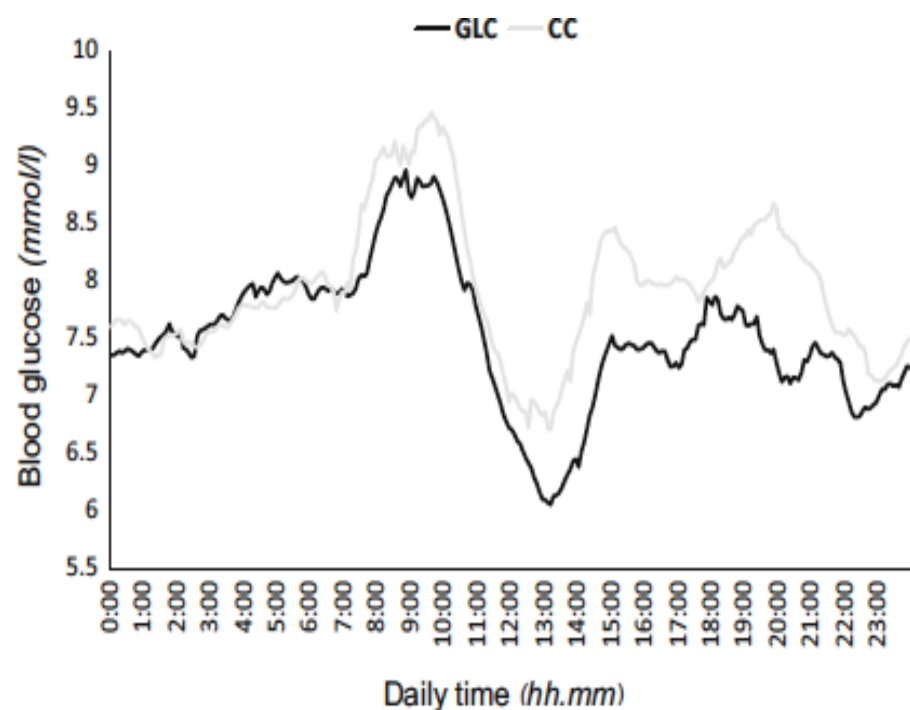
Rendere consapevole il giovane della necessità di mantenere un buon controllo per prevenire i rischi CV

Migliorare il controllo glicemico con un focus sul controllo post-prandiale

Necessità di rivalutare e ridefinire Il rapporto I:CHO e la gestione dei pasti

LA TECNOLOGIA PUO' AIUTARCI IN QUESTO PERCORSO

CGM during GL counting or CHO counting



Glycaemic load versus carbohydrate counting for insulin bolus calculation in patients with type 1 diabetes on insulin pump

[L. Bozzetto](#), [M. Giorgini](#), [A. Alderisio](#), [L. Costagliola](#), [A. Giacco](#), [G. Riccardi](#), [A. A. Rivellese](#)  & [G. Annuzzi](#)

Acta Diabetologica **52**, 865–871 (2015) | [Cite this article](#)

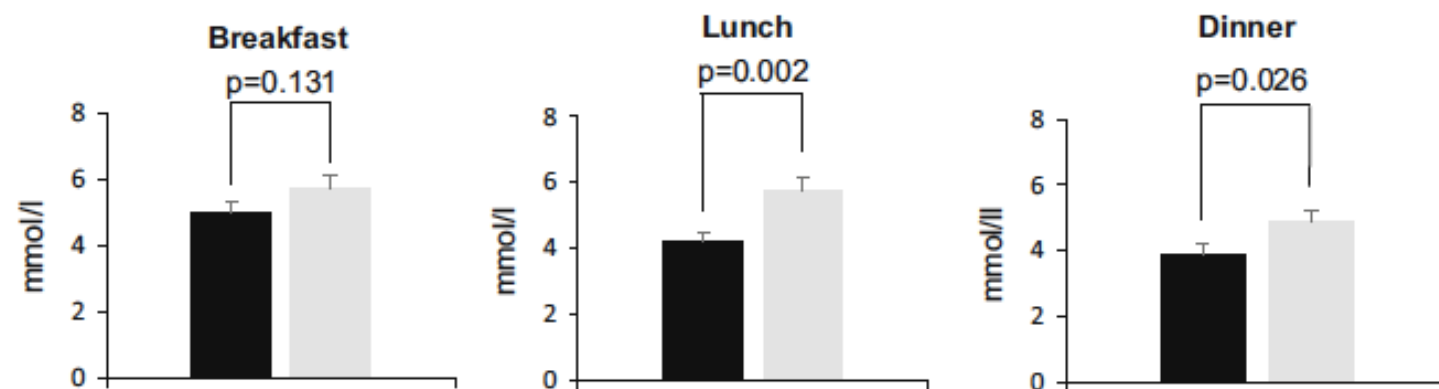
1006 Accesses | **17** Citations | **1** Altmetric | [Metrics](#)

Abstract

Aims

To evaluate feasibility and effectiveness on short-term blood glucose control of using glycaemic load counting (GLC) versus carbohydrate counting (CC) for prandial insulin dosing in patients with type 1 diabetes (T1D).

(b) Maximal amplitude of postprandial blood glucose excursion



Original article

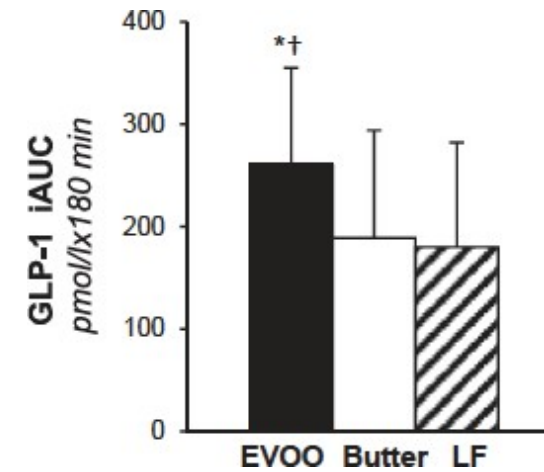
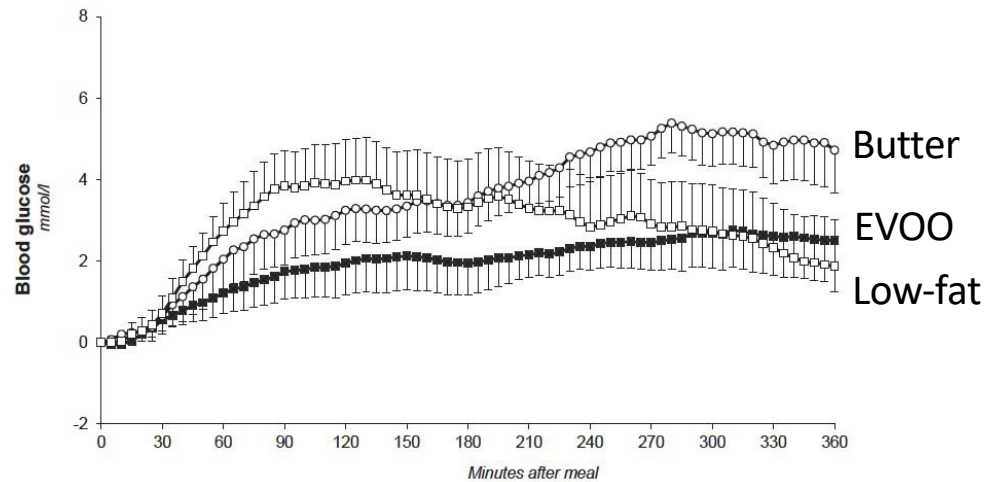
Gastrointestinal effects of extra-virgin olive oil associated with lower postprandial glycemia in type 1 diabetes

Lutgarda Bozzetto ^a, Antonio Alderisio ^a, Gennaro Clemente ^b, Marisa Giorgini ^a,
Francesca Barone ^a, Ettore Griffo ^a, Giuseppina Costabile ^a, Claudia Vetrani ^a,
Paola Cipriano ^a, Angela Giacco ^a, Gabriele Riccardi ^a, Angela Albarosa Rivellesse ^a,
Giovanni Annuzzi ^{a,*}

High fat EVOO 37 g

High fat butter 43

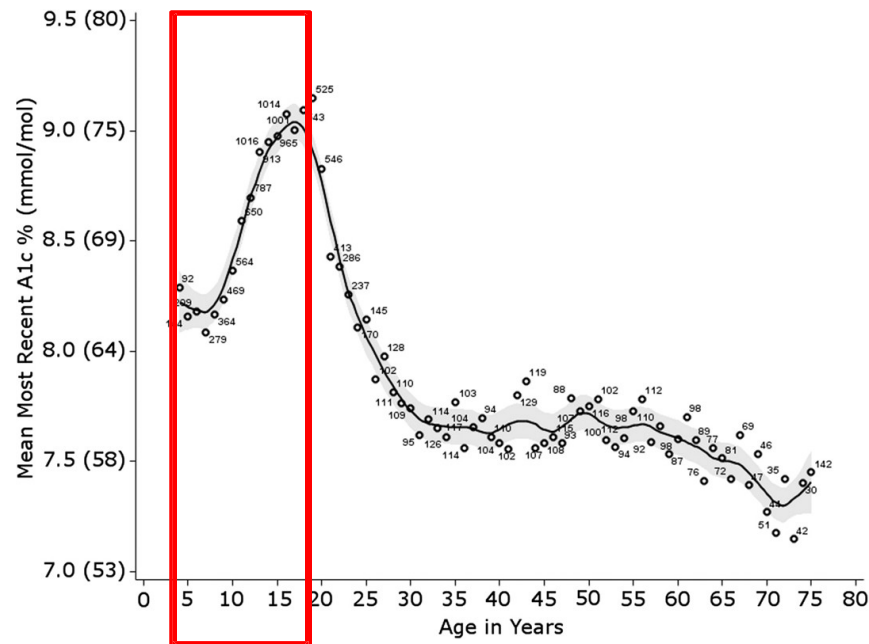
Low fat 10 g



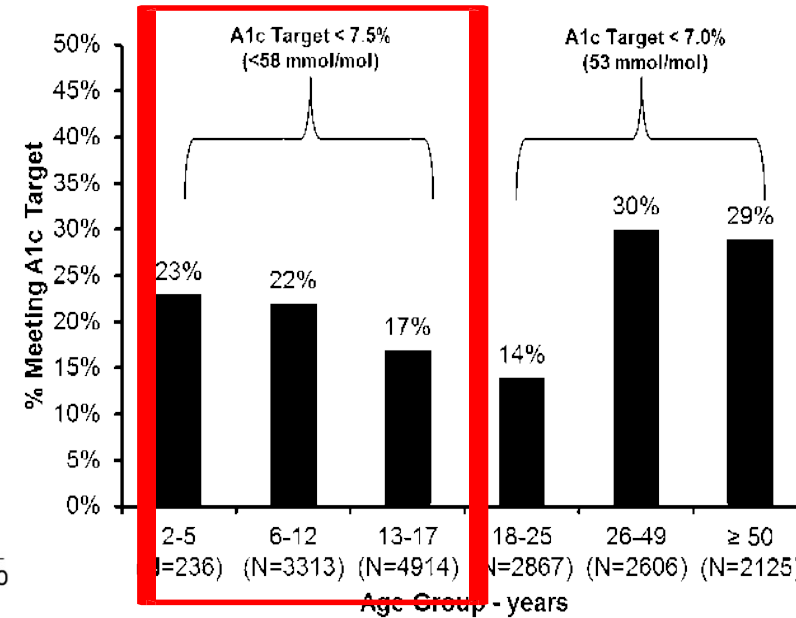
Macronutrients. CHO classification. Dietary fibers.

Current State of Type 1 Diabetes Treatment in the U.S.: Updated Data From the T1D Exchange Clinic Registry

Mean HbA1c levels by age



% pts achieving HbA1c target by age group



Take home messages

- La transizione non è un semplice trasferimento dal servizio pediatrico a quello dell'adulto, ma un **processo, il cui scopo è quello di rendere consapevoli e autonomi i giovani con diabete**. Un percorso strutturato pertanto è essenziale per mantenere uno stretto contatto fra i TEAMS e favorire una scelta consapevole anche nell'affidamento alle strutture dell'adulto più prossimali.
- La transizione rappresenta una “finestra di opportunità” per i giovani per dare una maggiore indipendenza e migliorare l'autogestione.
- Una attenzione particolare deve essere rivolta ai giovani con un esordio molto precoce in cui è anche necessario valutare con regolarità i fattori di rischio CV.
- La tecnologia ha un ruolo importante sia in ambito pediatrico per migliorare il controllo glicemico già dall'esordio quanto nell'età successiva anche come strumento educativo.

Grazie per l'attenzione