

IV Corso Nazionale SIMA



24-25 Novembre 2017
Palermo, *Mondello Palace Hotel*

Diabulimia e altro: quando il diabete incontra disturbi del comportamento alimentare.

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I disturbi dell'alimentazione rappresentano la terza categoria di patologie croniche più comuni in età adolescenziale, dopo obesità ed asma. Il picco di insorgenza si verifica tra i 14 e i 19 anni.¹

La prevalenza di questi disturbi in adolescenza è del 5.7% circa tra le adolescenti e del'1.2 % tra i maschi. ²

1. Herpertz-Dahlmann -2015

2. van Hoeken S, Hoek O - 2014.

Classificazione dei disturbi della alimentazione

Disturbi/Patologie della alimentazione (Eating Disorders ED):

malattie caratterizzate da segni e sintomi ben definiti e per i quali sono stati stabiliti gradi di severità (AN, BN, Binge-eating, pica, ruminazione).

Distrurbi del comportamento alimentare DCA (Eating disorders signs EDS):

comportamenti (quali riduzione della alimentazione finalizzata a perdita di peso, alimentazione erratica, vomito autoindotto, esercizio fisico estremo, uso di lassativi e diuretici) che sebbene non classificabili come vere patologie e per i quali non sono definibili livelli di gravità, richiedono attenta sorveglianza per la possibile evoluzione in ED.

Wildes JE, Marcus MD - Int J Eat Disord 2013; 46: 396.

Il ruolo dell'alimentazione nel T1D



Prevalenza di disordini alimentari nel T1D in età evolutiva (1990-2004)

T1D	Controlli	Bibliografia
16.9%	22%	<i>Engstrom I Acta Paediatr 1999</i>
49,4% (ED) 84.8% (EDS)	36.1% (ED) 49,1% (EDS)	<i>Jones JM Med J 2000</i>
0% (ED) 8.8% (EDS)	0% (ED) 1% (EDS)	<i>Colton P Diabetes Care 2004</i>
20.5% (EDS)	14.3 (EDS)	<i>Garcia-Reyna NI Med Clin 2004</i>

Limitazioni degli studi su DCA in bambini e adolescenti con T1D nel periodo 1990-2005

- Scarsa differenziazione tra ED, EDS e disturbi alimentari in patologie psichiatriche
- Differenze degli parametri usati per la valutazione dei comportamenti alimentari negli studi di popolazione.
- Attribuzione di significato patologico a comportamenti derivanti dalla necessità di gestire la malattia.
- Scarsità di questionari specifici per pazienti con T1D in età evolutiva.
- Mancata inclusione di quesiti specifici per il T1D (omissioni di iniezioni...).

DCA e T1D in età evolutiva

[Prevalence of Disturbed Eating Behavior in Children and Adolescents with Type 1 Diabetes: Assessment and Comparison to Healthy Peers--Results of a Multicenter Questionnaire-based Study].

[Article in German]

Hevelke LK¹, Albrecht C², Busse-Widmann P³, Kranz J⁴, Lange K¹, Markowitz JT⁵, Marshall LF⁶, Meurs S⁷, de Soye IH⁸, Saßmann H¹.

Psychoter Psychosom Med Psychol 2016

MATERIAL AND METHODS: A total of 246 children and adolescents (age: 11-19 years) with type 1 diabetes, from 6 pediatric diabetes centers in Germany, completed the generic SCOFF questionnaire and the diabetes specific Diabetes Eating Problem Survey-Revised (DEPS-R) to assess their eating behavior. Prevalence data were compared to representative data from a nationwide survey in Germany (KiGGS-study).

RESULTS: A total of 16.3% of the children and adolescents with type 1 diabetes scored above the SCOFF cut-off (≥ 2) (24.2% of the girls and 8.9% of the boys). The percentages in the healthy controls were 28.9% for girls and 15.2% for boys. Compared to this the prevalence of disturbed eating behavior was lower in the diabetes group ($p=0.017$ and $p<0.001$). According to the diabetes specific DEPS-R 11.2% of the boys and 13.2% of the girls with type 1 diabetes practiced insulin-purging. The association between SCOFF-

Discussion: Children and adolescents with type 1 diabetes are not more frequently affected by disturbed eating behavior than their healthy peers. Particularly boys with type 1 diabetes practicing insulin-purging, are not reliably detected by a generic screening tool.

DCA e T1D in età evolutiva

Diabet Med. 2013 Feb;30(2):189-98. doi: 10.1111/j.1464-5491.2012.03771.x.

Eating problems in adolescents with Type 1 diabetes: a systematic review with meta-analysis.

Young V¹, Eiser C, Johnson B, Brierley S, Epton T, Elliott J, Heller S.

RESULTS: Eating problems [both disordered eating behaviour (39.3 and 32.5%; $d = 0.52$, 95% CI 0.10-0.94) and eating disorders (7.0 and 2.8%; $d = 0.46$, 95% CI 0.10-0.81)] were more common in adolescents with Type 1 diabetes compared with peers and both were associated with poorer glycaemic control ($d = 0.40$, 95% CI 0.17-0.64). In restricted analyses involving measures adapted for diabetes, associations between eating problems and poorer glycaemic control remained ($d = 0.54$, 95% CI 0.32-0.76). Disordered eating behaviour (51.8 and 48.1%; $d = 0.06$, 95% CI -0.05 to 0.21) and eating disorders (6.4 and 3.0%; $d = 0.43$, 95% CI -0.06 to 0.91) were more common in adolescents with Type 1 diabetes compared with peers, but differences were non-significant.

CONCLUSIONS: Eating problems are common among this age group. Future work in populations with Type 1 diabetes should develop sensitive measures of eating problems and interventions, and establish predictors of eating problems. Screening in clinics is recommended.

The New England Journal of Medicine

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VOLUME 336

JUNE 26, 1997

NUMBER 26



DISORDERED EATING BEHAVIOR AND MICROVASCULAR COMPLICATIONS IN YOUNG WOMEN WITH INSULIN-DEPENDENT DIABETES MELLITUS

ANNE C. RYDALL, M.Sc., GARY M. RODIN, M.D., MARION P. OLMSTED, Ph.D., ROBERT G. DEVENYI, M.D.,
AND DENIS DANEMAN, M.B., B.Ch.

**TABLE 3. DISORDERED-EATING STATUS AT BASE LINE
AND DIABETES-RELATED MICROVASCULAR COMPLICATIONS
AT FOLLOW-UP.**

DISORDERED-EATING STATUS AT BASE LINE	DIABETIC RETINOPATHY AT FOLLOW-UP*	ABNORMAL URINARY ALBUMIN EXCRETION AT FOLLOW-UP†
	no. with complication/total no. (%)	
Highly disordered	6/7 (86)	3/7 (43)
Moderately disordered	6/14 (43)	3/15 (20)
Nondisordered	12/50 (24)	9/50 (18)

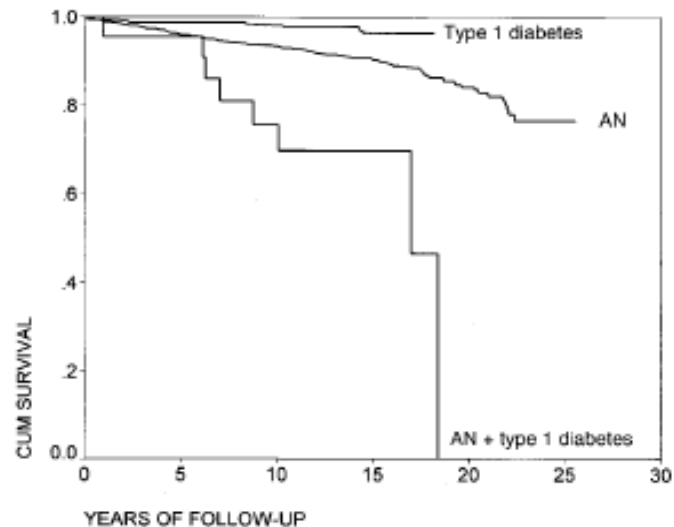
Conclusions Disordered eating behavior is common and persistent in young women with IDDM and is associated with impaired metabolic control and a higher risk of diabetic retinopathy. (N Engl J Med 1997; 336:1849-54.)

Mortality in Concurrent Type 1 Diabetes and Anorexia Nervosa

SØREN NIELSEN, MD¹

Diabetes Care 25:309–312, 2002

RESULTS — After ~10 years of follow-up, 13 of 510 females with type 1 diabetes, 43 of 658 females with anorexia nervosa (AN), and 8 of 23 concurrent case subjects had died. Mortality rate was 2.2 (per 1,000 person-years) for type 1 diabetes, 7.3 for AN cases, and 34.6 for concurrent cases. Crude mortality rates were 2.5, 6.5, and 34.8%, respectively. SMR was 4.06 in type 1 diabetes, 8.86 in AN, and 14.5 in concurrent cases. Survival analysis indicated between-group differences in mortality.



CONCLUSIONS — Concurrent type 1 diabetes and AN is a rare but serious condition in females. All indexes of mortality evidence excess mortality in this preliminary study. Vigorous and well-directed treatment efforts seem vital for this subpopulation. Collaboration between diabetologists and eating disorder specialists is warranted. The implications of other eating disorders and subclinical eating disorders in diabetic populations need to be analyzed, especially because these conditions are more frequent than clinical eating disorders.

Eating habits, body weight, and insulin misuse. A longitudinal study of teenagers and young adults with type 1 diabetes.

Bryden KS - Diabetes Care 1999, 22: 1956.

Aim: To examine disordered eating, insulin misuse, weight change, and their relationships with glycemic control and diabetic complications in adolescents with type 1 diabetes followed up over eight years.

Study design: Of 76 adolescents (43 male, 33 female) with type 1 diabetes aged 11-18 years at the first assessment, 65 were interviewed as young adults (aged 20-28 years). Eating habits were assessed using a standardized Eating Disorder Examination.

Results: Concern over weight and shape increased significantly for both sexes from adolescence to young adulthood.

No patients met the criteria for anorexia nervosa or bulimia nervosa at either assessment. A total of 10 (30%) females, but none of the males admitted underusing insulin to control weight.

Five (45%) females with microvascular complications had intentionally misused insulin to prevent weight gain.

Conclusions: An increase in BMI from adolescence to adulthood was associated with higher levels of concern over shape and weight and more intense dietary restraint, especially among females.

Overt eating disorders were no more prevalent in these patients than in the general population, but milder forms of disordered eating were common and had implications for diabetes management.

Insulin omission for weight control was frequent among females and may contribute to poor glycemic control and to risk of complications.

Disturbed Eating Behavior and Omission of Insulin in Adolescents Receiving Intensified Insulin Treatment

A nationwide population-based study

LINE WISTING, MA¹
DAG HELGE FROISLAND, MD^{2,4}
TORILD SKRIVARHAUG, MD, PHD^{3,7}

KNUT DAHL-JØRGENSEN, MD, PHD^{5,6,7}
ØYVIND RØ, MD, PHD¹

Although differences complicate the interpretation of rates across studies, t

Diabetes Care 2013 ;36:3382-7.

Aim: to establish the prevalence of disturbed eating behavior (DEB) and insulin omission among 770 children and adolescents 11-19 years of age with type 1 diabetes.

Results: A total of 27.7% of the females and 8.6% of the males were DEB-positive and had significantly higher HbA1c.

31.6% of the participants reported insulin restriction and 6.9% reported insulin omission after overeating.

Patients reporting insulin restriction had significantly higher HbA1c (9.0% [75 mmol/mol]; SD, 1.7) than nonrestrictors.

Conclusions: Both DEB and insulin restriction were associated with poorer metabolic control, which may increase the risk of serious late diabetes complications.

Prevalence of disturbed eating behavior

Table 2—Prevalence rates of DEB in type 1 diabetes based on a predetermined cutoff score of ≥ 20 on the DEPS-R, categorized by age and weight

	All	Males	Females	χ test
Whole sample	18.3	8.6	27.7	<0.001
11–13 years (n = 252)	7.2	7.1	9.4	NS
14–16 years (n = 365)	19.2	7.3	32.8	<0.001
17–19 years (n = 153)	32.7	14.5	49.4	<0.001
Underweight (n = 38)	8.1	6.3	9.1	NS
Normal weight (n = 533)	14.9	6.9	23.3	<0.001
Overweight (n = 147)	28.9	15.2	42.0	<0.01
Obese (n = 22)	38.1	14.3	53.3	NS

Data are presented as percentages and significance levels of the differences between males and females. NS, not significant.



Clinical Characteristics and Outcome of 467 Patients With a Clinically Recognized Eating Disorder Identified Among 52,215 Patients With Type 1 Diabetes: A Multicenter German/Austrian Study

Diabetes Care 2014;37:1581–1589 | DOI: 10.2337/dc13-2156



Nicole Scheuing,¹ Bela Bartus,²
Gabriele Berger,³ Holger Haberland,⁴
Andrea Icks,^{5,6} Burkhard Knauth,⁷
Nicole Neßen-Hellmuth,⁸
Joachim Rosenbauer,⁶ Martin Teufel,⁹ and
Reinhard W. Holl,¹ on behalf of the DPV
Initiative and the German BMBF
Competence Network Diabetes Mellitus

Table 2—Diabetes-related outcome variables for pediatric and young-adult T1DM patients with and without comorbid ED

Adjusted estimates	No ED	AN	P		P		P
			No ED vs. AN	BN	No ED vs. BN	EDNOS	
<i>n</i>	51,748	141		62		264	
Clinical variable, %							
Hypertension	20.6	16.9	NS	20.9	NS	27.5	0.005
Dyslipidemia	37.4	32.8	NS	41.8	NS	56.0	<0.001
Treatment and metabolic control							
HbA _{1c} (%)	8.29 ± 0.01 (<i>n</i> = 51,084)	8.61 ± 0.15 (<i>n</i> = 139)	0.043	9.11 ± 0.23	<0.001	9.00 ± 0.11 (<i>n</i> = 262)	<0.001
HbA _{1c} (mmol/mol)	67.1 ± 0.1 (<i>n</i> = 51,084)	70.6 ± 1.7 (<i>n</i> = 139)	0.043	76.1 ± 2.5	<0.001	74.9 ± 1.2 (<i>n</i> = 262)	<0.001
Daily insulin dosage (units/kg)	0.838 ± 0.001	0.815 ± 0.025	NS	0.729 ± 0.038	0.004	0.845 ± 0.018	NS
Daily insulin dosage (units/BS)	29.93 ± 0.05	27.30 ± 0.92	0.004	25.86 ± 1.38	0.003	30.61 ± 0.67	NS
CSII, %	19.5	13.1	0.037	15.1	NS	17.6	NS
Pathological insulin injection sites, %	48.4 (<i>n</i> = 48,327)	64.3 (<i>n</i> = 138)	<0.001	64.1 (<i>n</i> = 55)	0.024	62.1 (<i>n</i> = 254)	<0.001
Complications and comorbidities							
Severe hypoglycemia per 100 person-years	18.6 ± 0.2	24.8 ± 3.2	0.024	26.5 ± 5.3	NS	24.3 ± 2.2	0.004
Diabetic ketoacidosis per 100 person-years	5.7 ± 0.1	12.1 ± 2.1	<0.001	18.0 ± 4.1	<0.001	12.9 ± 1.6	<0.001
Hospitalization per 100 person-years	54.9 ± 0.3	89.3 ± 6.0	<0.001	132.0 ± 12.7	<0.001	91.0 ± 4.4	<0.001
Duration of stay (days per year)	4.81 ± 0.01	11.31 ± 0.21	<0.001	18.05 ± 0.48	<0.001	8.44 ± 0.13	<0.001

Data are means ± SEM unless otherwise indicated. Estimates are based on multivariable regression models and are adjusted for age, sex, and duration of diabetes. Only parameters with at least one significant difference between groups are shown in the table. *P* values are given for the comparison with no ED. Some variables were not documented in all patients; in this case, the number studied is given in parentheses. NS, not significant.

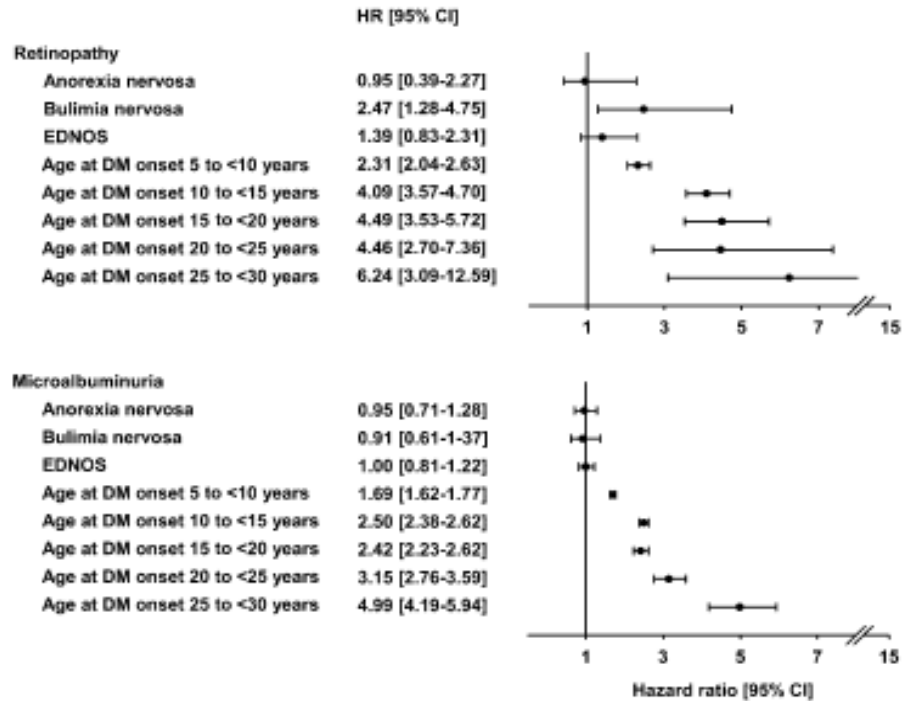


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CONCLUSIONS

Diabetes health care professionals should be aware of comorbid EDs in pediatric/young-adult T1DM patients. An ED diagnosis is associated with worse metabolic control and higher rates of diabetes complications.

Eating Disorders and Disordered Eating Symptoms in Adolescents with Type 1 Diabetes

G. Toni - *Nutrients* 2017;9;906

	Fattori di rischio	Bibliografia
Età e età all'esordio di T1D	7-18 anni	<i>Eaton DK - MMWR Surveill Summ 2012</i> <i>Takii M - Pediatr Diabetes 2011</i> <i>Neumark-Sztainer D - Diabetes Care 2002</i>
Sesso	Femminile (5-7 F: 1M)	<i>Neumark-Sztainer D - Public Health Nutr - 2010</i> <i>Wisting L - PloS ONE 2015</i>
Adeguamento alla dieta	Dieta fortemente dettagliata, osservanza rigorosa della ripartizione quali-quantitativa degli alimenti	<i>Colton P - Diabetes Care 2004</i> <i>Kelly SD - Diabetes Educ 2005</i> <i>Yardley IE - Diabets Thecnol Therap 2013</i>
BMI e immagine corporea	Sovrappeso/obesità, insoddisfazione della propria immagine corporea	<i>Russel Jones D - Diabetes Obes Metab 2007</i> <i>Gryll V - Psychol Psychother 2010</i> <i>Tse J - J Acad Nutr Diet 2012</i>
Caratteristiche personali	Ansia, depressione, scarsa autostima, insoddisfacente QdV	<i>Faiburn CG - Int J Eat Disord 1994</i> <i>Martin KA - J Sport Exerc Psychol 1997</i> <i>Goncalves J - Can J Diabetes 2016</i>
Famiglia	Scarsa attenzione alla qualità della alimentazione; eccesso di peso, alimentazione disordinata e DCA nella madre	<i>Maharaj SI - Psychol Med 2003</i> <i>Williams C - Psychol Healt Med 2014</i> <i>Caccavale LJ - Dev Behav Padiatr 2015</i>

Wilson CE, Smith EL, Coker SE, Hobbis ICA, Acerini CL. Testing an integrated model of eating disorders in paediatric type 1 diabetes mellitus. *Pediatric Diabetes* 2015; 16: 521–528.

Pediatric Diabetes



Background: Eating disorders in young people with type 1 diabetes mellitus confer additional health risks beyond those conferred by the disease itself. Risk factors for developing eating disorders are poorly understood.

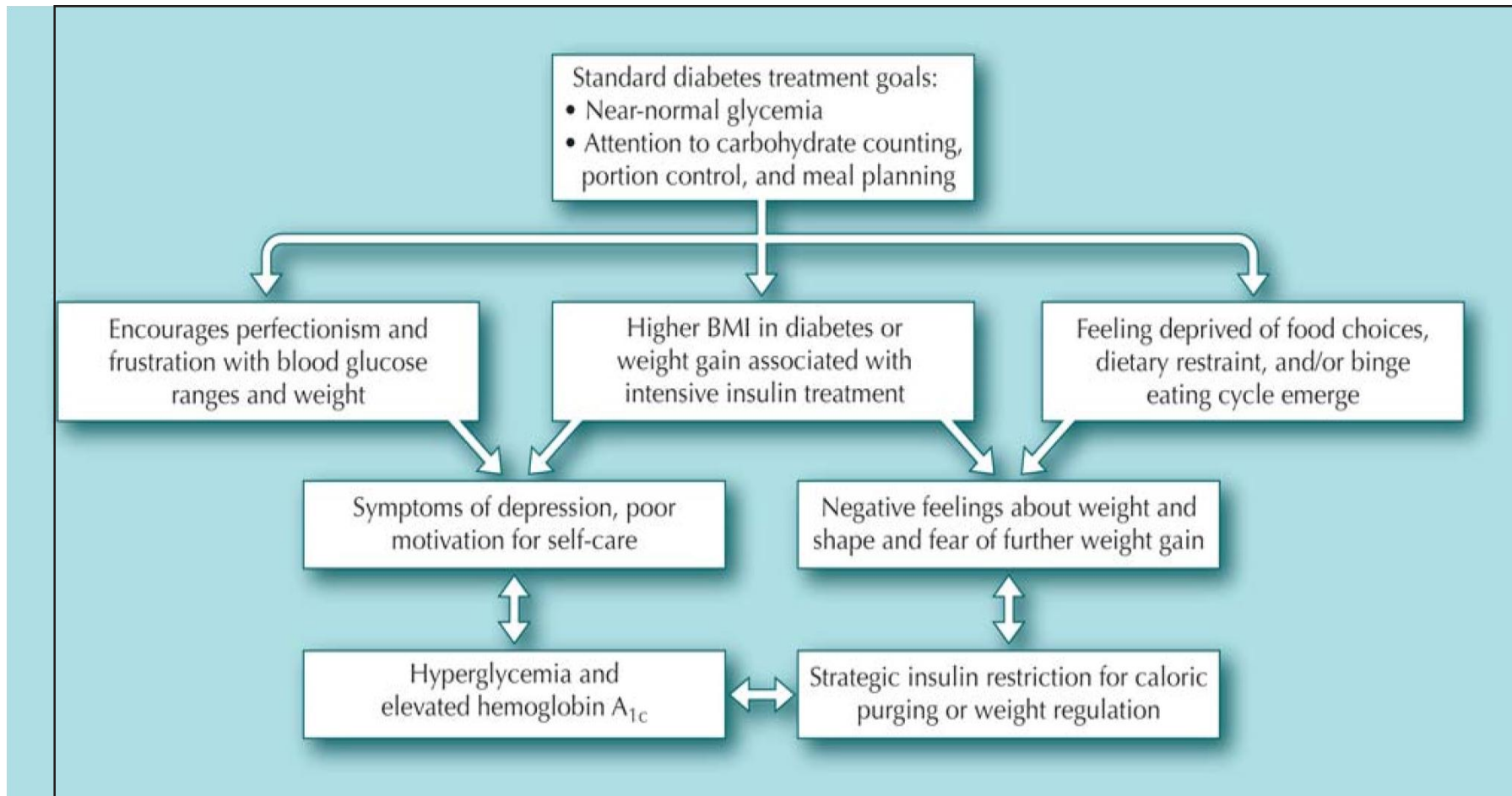
Methods: Fifty young people aged 14–16 and their primary caregiver were asked to complete interviews and questionnaires about their eating attitudes and behaviours, dysfunctional perfectionism, self-esteem, family conflict, and general mental health symptoms. Recent weight and height and glycaemic control were extracted from the medical file.

Results: Different factors distinguished those young people who displayed eating disorder attitudes from those who did not (higher BMI-z, poorer glycaemic control, and lower self-esteem) and those young people who displayed eating disorder behaviour from those who did not (lower self-esteem and higher diabetes-related family conflict).

Conclusions: The results of the current study suggest that there might be different factors associated with eating disorders (ED) attitudes and ED behaviours, but that food/eating-related factors, family factors, and intra-personal factors are all important. Furthermore there are some gender differences in the presence of ED attitudes and behaviours and preliminary evidence that higher body mass indexes (BMIs) impact on girls more than they do on boys.

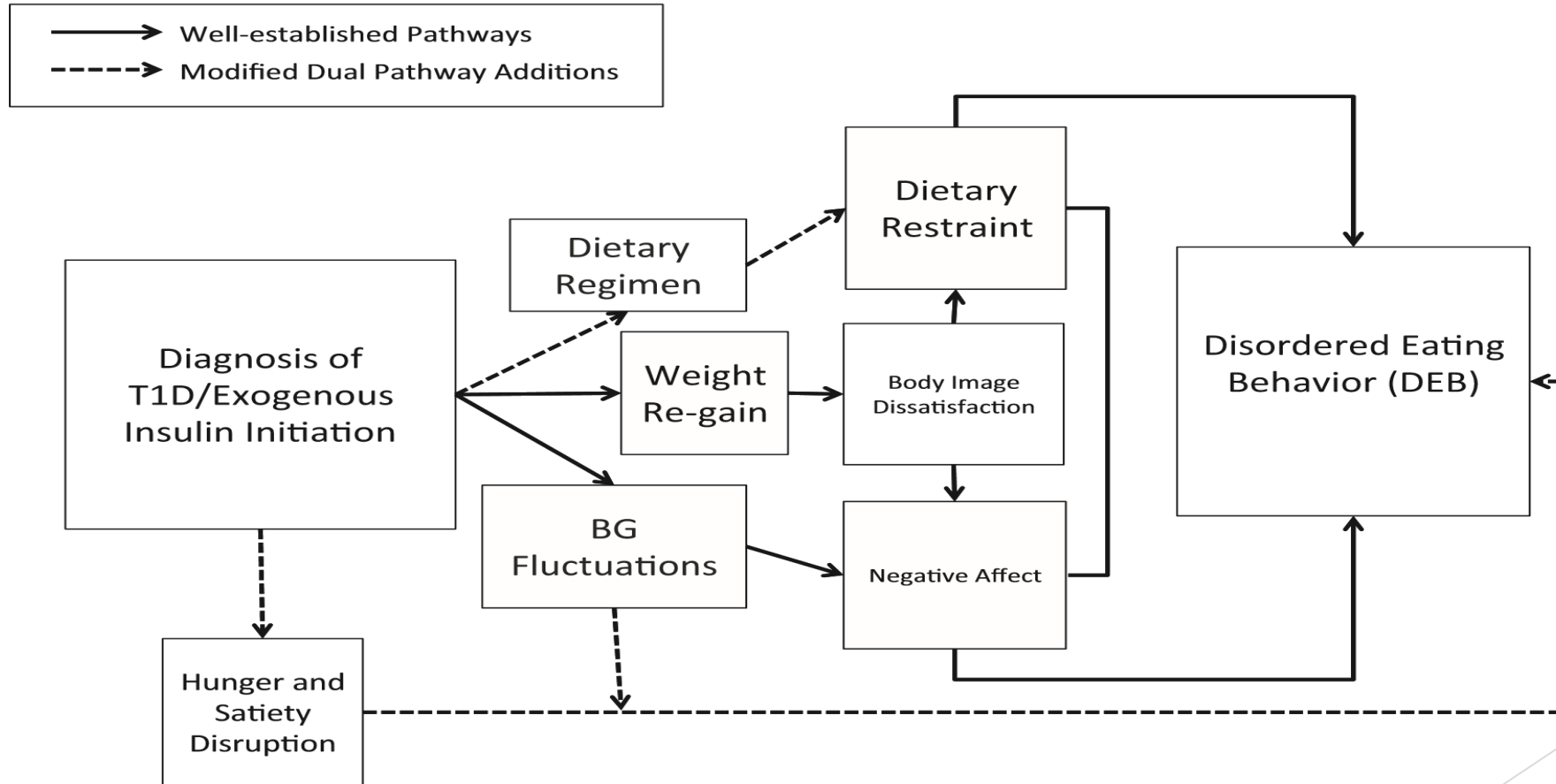
Disturbed Eating Behaviors and Eating Disorders in Type 1 Diabetes: Clinical Significance and Treatment Recommendations.

Ann E. Goebel-Fabbri Current Diabetes Reports 2009, 9:133–139



Topical Review: A Comprehensive Risk Model for Disordered Eating in Youth With Type 1 Diabetes.

Claire M. Peterson - Journal of Pediatric Psychology 2015:403;385–390,



Amilina e Ghrelina potrebbero avere un ruolo nella genesi dei DCA del T1D?

Ridotta secrezione di insulina all'esordio di T1D

Bassi livelli di insulinemia al follow-up



Ridotta produzione di amilina



Rallentato svuotamento gastrico
Ridotta secrezione di glucagone



Effetti sulla regolazione della sazietà e della fame



Fluttuazione dei livelli circolanti di Ghrelina



Elementi di sospetto per DA e/o DCA in adolescenti con T1D

- Frequenti omissioni delle iniezioni di insulina
- Compenso metabolico mediocre e instabile
- Episodi ricorrenti di ipoglicemia grave
- Calcolo sistematico del contenuto calorico e del peso degli alimenti
- Mancato rispetto degli appuntamenti per visite ambulatoriali
- Rifiuto della valutazione del peso
- Eccessiva preoccupazione per il proprio aspetto
- Evoluzione verso vegetarianismo, veganesimo e diete autoelaborate.



Obesità/sovrappeso, DCA e T1D: una diagnosi differenziale non semplice

Obesità e T1D o Obesità, DCA eT1D?

	OB e T1D	OB, DCA e T1D
Familiarità per OB	+++	+
Età di comparsa OB	indifferente	pubertà
Insorgenza OB esordio T1D	precedente	successiva
Modalità di sviluppo di OB	graduale	improvvisa
BMI	stabile	fluttuante
Dose insulina	elevata	variabile
Somministrazione di insulina	regolare	irregolare
AcN e segni di IR	+++	±

Elementi di sospetto per DA e/o DCA in adolescenti con T1D

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- Evoluzione verso vegetarianismo, veganesimo e diete autoelaborate.



Conferma del sospetto

- Utilizzo di questionari specifici per T1D
- **Capacità del team curante di instaurare un rapporto empatico con l'adolescente e la sua famiglia.**



Test di valutazione

Edi -3 (Eating disorder inventory)

Test di autosomministrazione

Destinatari: dai 13 anni

91 items

Richiede lungo tempo di compilazione, difficile da interpretare , poco pratico per la quotidianità.

SCOFF Test (Sick Control Onestone Fat Food) e SCOFF Test-R

5 item

specifico per anoressia

1 “Repertorio delle scale di valutazione in psichiatria”. Luciano Conti, cap 12-13

Test di valutazione

Deps-r (Diabetes Eating Problem Survey)¹

16 items

Unico test specifico per soggetti con T1D

Destinatari: dai 10 ai 18 anni

Non ancora validato in italiano

Eat 26 (Eating Attitude test):

Test di autosomministrazione

26 items

Destinatari: da età scolare anche per piccoli.

Validato in lingua italiana

Semplice per essere somministrato ad un gruppo ampio di pazienti.

1. Brief Screening Tool for Disordered Eating in Diabetes, J. Markowitz, Diab Care 2010

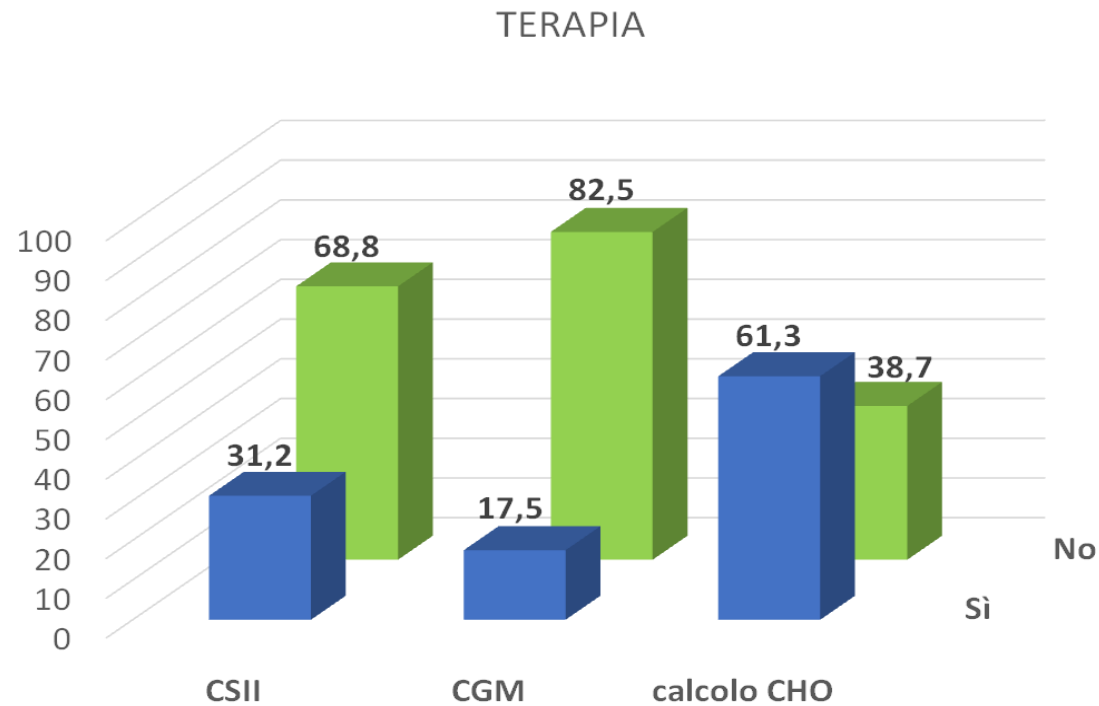
Obiettivi

Valutare il rischio di disturbi del comportamento alimentare tra adolescenti con diabete di tipo 1 (T1D) e la correlazione con parametri biometrici, fattori di rischio metabolici e terapia utilizzata.

- 150 adolescenti (età 14-18 anni) affetti da T1D
- questionario **EAT-26** durante una visita educativo terapeutica di gruppo
- dati clinici (genere, età, durata di malattia, peso, altezza, circonferenze vita e fianchi, pressione, stadio puberale), valore di HbA1c, terapia utilizzata (multi-iniettiva o con pompa, uso del sensore, esecuzione del calcolo dei carboidrati), comorbidità ed eventuali complicanze.

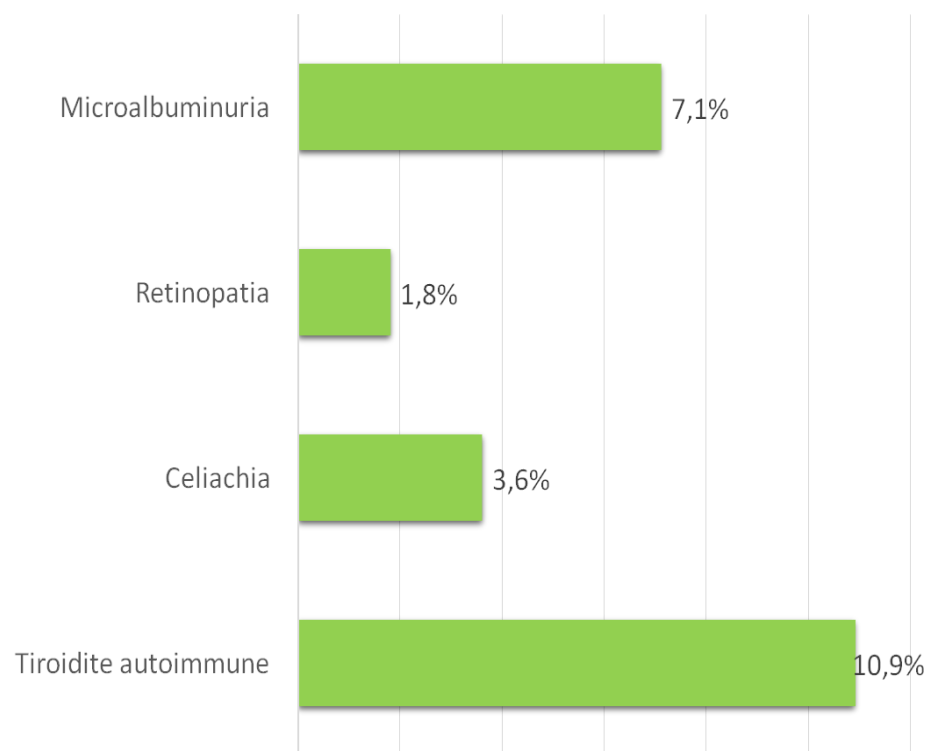
Dati preliminari di 80 pazienti

- Rapporto M:F 1.22:1 • HbA1c 7.8%
- Età media 16 anni



Dati preliminari di 80 pazienti

COMORBITA' E COMPLICANZE



PARAMETRI CLINICI mediana

CV	73,5 cm
CF	82,0 cm
BMI	22,2
PAO	115/67 mmHg

EMATOCHIMICI mediana

Colesterolo totale	167 mg/dl
Colesterolo HDL	62 mg/dl
Trigliceridi	58 mg/dl
Colesterolo LDL	86 mg/dl
HbA1c	7,8%

Risultati

La prevalenza di soggetti con valore di EAT-26 ≥ 20 , indicativo di rischio di DCA, era di 4 (pari al 5%).

Nessuna variabile è stata correlata allo sviluppo di DCA né sono state osservate correlazioni significative con le variabili continue in esame.

Con Eat-26 la prevalenza di DCA negli adolescenti con diabete risulta sovrapponibile a quella riscontrata nella popolazione sana

La conta dei CHO e la terapia con CSII non paiono essere fattori di rischio

Va considerato il limite dell'Eat 26: come la maggior parte dei questionari per DCA non è specifico per popolazione con T1D.

Approccio al trattamento dei DA/DCA nelT1D in età adolescenziale 1.

1. DISPONIBILITÀ DI UN TEAM MULTIDISCIPLINARE COLLABORATIVO

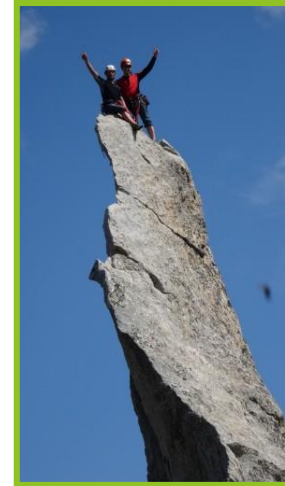
Pediatra endocrinologo, infermiere dedicato, nutrizionista, psicologo con esperienza in DCA e diabete

2. RICOVERO IN OSPEDALE SOLO IN PRESENZA DI SITUAZIONE CLINICA DI PERICOLO

3. VISITE AMBULATORIALI MENSILI CON TERAPEUTA ESPERTO E DEDICATO AL PAZIENTE

4. OBIETTIVI DI TRATTAMENTO REALISTICI, RAGGIUNGIBILI E MIRATI A

- riportare il paziente ad un dosaggio insulinico adeguato
- migliorare gradualmente il compenso metabolico
- normalizzare le abitudini alimentari



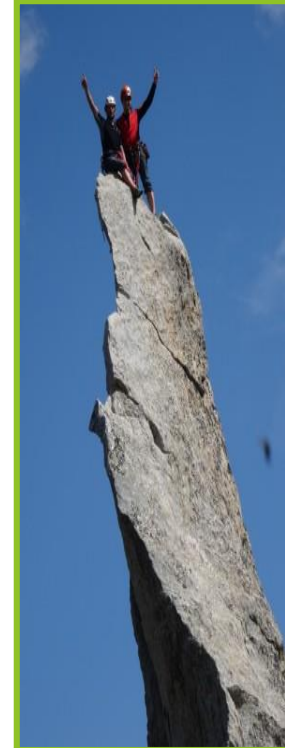
Approccio al trattamento dei DA/DCA nelT1D in età adolescenziale 2.

5. SUPPORTO FAMILIARE

- coinvolgimento dei famigliari nella somministrazione di insulina
- terapia del nucleo familiare

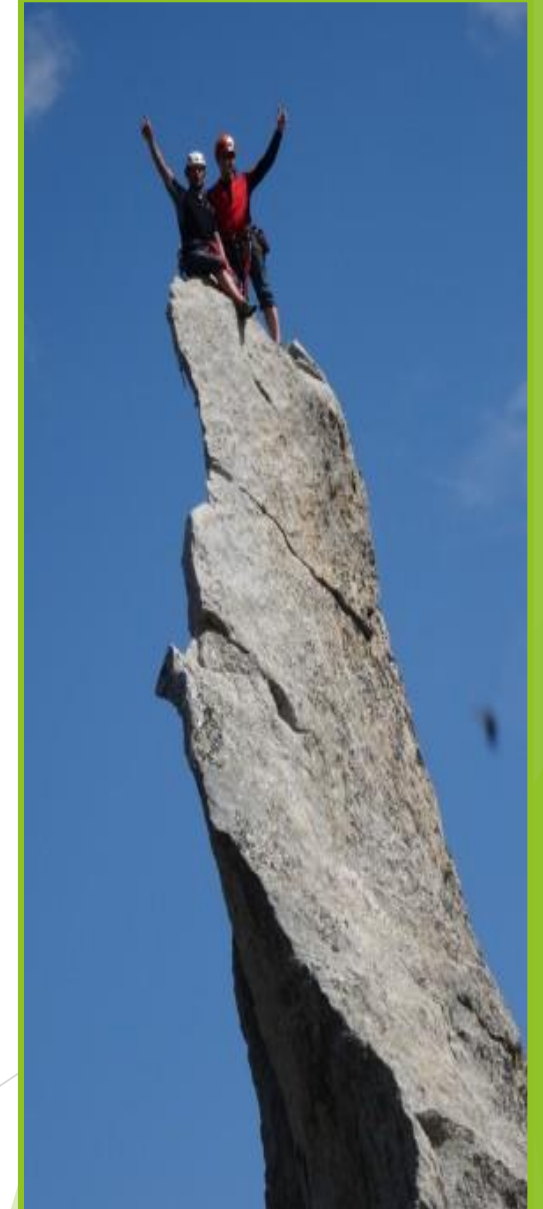
6. ANTICIPARE LE DIFFICOLTÀ POSSIBILI DELLA TERAPIA

- l'edema e la ritenzione idrica possibili dopo la ripresa di terapia insulinica adeguata e miglioramento del compenso possono determinare preoccupazioni per il peso e per l'aspetto fisico;
- l'ipoglicemia può indurre episodi di binge eating o riportare a omissioni o riduzioni della terapia insulinica;
- le rinunce alimentari associate a tentativi di perdere peso possono causare un circolo vizioso di binge eating e ricorso a lassativi;
- la depressione può aumentare il sentimento di inutilità degli sforzi e diminuire la motivazione dell'adolescente a prendersi cura di sé e perpetuare le difficoltà di compenso glicemico.



Take home message

- DA e DCA sono di non raro riscontro nell'adolescente.
- Nell'adolescente con T1D l'alimentazione ha un ruolo centrale nella gestione terapeutica ma ,può portare a sviluppo di DCA.
- La frequenza di DA e DCA nell'adolescente con T1D, simile o modestamente superiore a quella del coetaneo sano, comporta un aumentato rischio di malgoverno e complicanze.
- DA e DCA nell'adolescente con T1D si esprimono con sintomi talora sfumati, tra i quali la riduzione/omissione della terapia insulinica, le ipoglicemie ricorrenti, l'insoddisfazione della propria immagine corporea.
- La diagnosi precoce di DCA è indispensabile per ridurre i rischi immediati e a distanza e dovrebbe essere basata sull'utilizzo di questionari specifici attualmente ancora limitati.
- L'approccio terapeutico attuale si fonda essenzialmente su un intervento multidisciplinare che porti a (re)instaurare un rapporto empatico con l'adolescente attraverso un percorso graduale, che ne stimoli l'autostima e la resilienza.





Grazie a:
Carla e Laura Sacchetti
Ivana Rabbone
Michela Trada
Silvia Einaudi
Patrizia Matarazzo
Silvia Vannelli
Luisa De Sanctis
Maria Giovanna Ignaccolo
Davide Tinti
Gerdi Tuli
Sara Giorda
Germana Rosso e Patrizia,
Rosaria, Roberta,
Loredana
i nostri pazienti e
quanti hanno condiviso
questi anni di lavoro,
ricerca, collaborazione e
amicizia.

**Disordered Eating and Insulin Restriction in Youths
Receiving Intensified Insulin Treatment: Results
from a Nationwide Population-based Study**

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International Journal of Eating Disorders 49:2 191–196 2016

Aim: to estimate the prevalence of disordered eating and insulin restriction (IR) among 819 youths aged 11-21 years with early-onset type 1 diabetes (T1D) and a disease duration of at least 10 years.

Results: A total of 28.2% of the female and 9.2% of male patients were EDS-positive without IR and 4.2% and 5.3% reported frequent IR but were EDS-negative; 2.7% and 1.9% screened positive for both disordered eating and IR. Patients with disordered eating, frequent IR, or both showed significantly worse glycemic control and partly more inpatient-treated diabetic ketoacidoses than patients who screened negative.

Conclusions: Approximately one in three female and one in six male patients with early-onset long-duration T1D reported disordered eating and/or frequent IR. Because of their association with worse outcomes, both disordered eating and IR should be considered in T1D care irrespective of sex, age at onset, and diabetes duration.

Translation and validation of the Diabetes Eating Problem Survey to screen eating disorders in patients with type-1 diabetes mellitus

- ▶ We have developed a questionnaire in Spanish capable of identifying the risk of onset of a specific ED in patients with T1DM. The EPAD-R questionnaire detected 10% more cases and different ones than those detected by the EAT-26 test. It is necessary to use specific screening tools to correctly identify eating disorders in patients with T1DM.

[Med Clin \(Barc\)](#). 2017 Jun 21;148(12):548-554. doi: 10.1016/j.medcli.2016.12.035.
Epub 2017 Feb 21.