26^ Congresso Interassociativo AMD-SID Lombardia 2020

LA DISFUNZIONE DELLA SFERA SESSUALE NELLA DONNA

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Coccaglio, 23-24 Ottobre 2020

26^ Congresso Interassociativo AMD-SID Lombardia

Dichiaro di NON aver ricevuto negli ultimi due anni compensi o

finanziamenti da Aziende Farmaceutiche e/o Diagnostiche

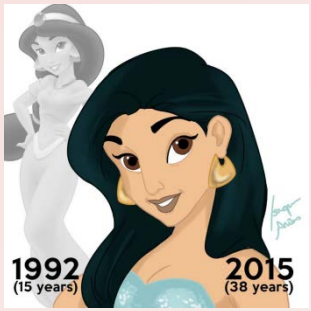
Dichiaro altresì il proprio impegno ad astenersi, nell'ambito dell'evento, dal nominare, in qualsivoglia modo o forma, aziende farmaceutiche e/o denominazione commerciale e di non fare pubblicità di qualsiasi tipo relativamente a specifici prodotti di interesse sanitario (farmaci, strumenti, dispositivi medico-chirurgici, ecc.).

Benessere psichico

Stato di salute

Anatomia

Età



La funzione sessuale femminile è multisistemica

Integrità sistema neurologico

Aspetti relazionali

Ormoni

Integrità sistema vascolare

Endogin, 2020

FISIOLOGIA DELLA FUNZIONE SESSUALE FEMMINILE

Desiderio

- ✓ **COGNITIVE MOTIVATION**
- ✓ **COGNITIVE SEXUAL STIMOLATION**

Maiorino et al, 2020

Eccitazione

- ✓ **SUBJECTIVE SEXUAL AROUSAL**
- ✓ **PHYSICAL AROUSAL**

V*asocongestione del genitali*
T*ensione neuromuscolare nel corpo*
L*ubrificazione*
P*rotrusione del clitoride e dei bulbi vestibolo-vaginali*
E*versione delle piccole labbra*

Orgasmo

- ✓ **CIRCUITI non adrenergici, non colinergici MEDIATI DA VIP E NO**

T*ono muscolare*
E*ndorfine*
M*entalizzazione dell'esperienza a livello limbico e memoria relazionale*

Raramente le donne si lamentano dei disturbi dell'eccitazione ma più frequentemente di SCARSA LIBIDO, DIFFICOLTA' NELL'ORGASMO E DOLORE

DIABETE E (DIS)FUNZIONE SESSUALE:
Fattori vascolari

Fare sesso equivale a salire due piani di scale in 10 minuti!

Strettamente legati alla compromissione dell'AROUSAL, ORGASM AND SATISFACTION

- Riduzione di NO e della vasocongestione dei genitali
- Aterosclerosi e infiammazione
- Disfunzione endoteliale (aumentata espressione per recettori di endoteline, chinasi Rho)
- ROS
- Riduzione dell'idratazione delle mucose vulvo-vaginali
- Fibrosi del clitoride
- Pareti vaginali più spesse
- Riduzione nella percezione dello stimolo tattile
- Atrofia di terminazioni nervose
- Ridotta lubrificazione
- Maggiore suscettibilità alle infezioni
- Dispareunia

Maiorino et al, 2020

DIABETE E (DIS)FUNZIONE SESSUALE:

IJIR: Your Sexual Medicine Journal (2020) 32:221–225
https://doi.org/10.1038/s41443-019-0155-6

ARTICLE

Association between clitoral tissue perfusion and female sexual dysfunction in healthy women of reproductive age: a pilot study

Adriana Coppola[1] · Pietro Gallotti[1] · Dimitrios Choussos[2] · Arturo Pujia[3] · Tiziana Montalcini[3] · Carmine Gazzaruso[1]

Received: 14 February 2019 / Revised: 15 April 2019 / Accepted: 23 April 2019 / Published online: 4 June 2019

- TmPO2 correla con la funzione sessuale femminile
- Relazione tra emodinamica e FSF
- TmPO2 dovrebbe essere testato come marker di aumentato rischio cardiovascolare nelle donne
- TmPO2 possibile equivalente di ED negli uomini?

Variable	FSD group ($n = 9$)	NO FSD group ($p = 18$)	p-value
Age (years)	31.9 ± 4.0	30.8 ± 5.0	0.5934
BMI	22.9 ± 1.4	23.5 ± 1.1	0.3006
FSFI total score	17.0 ± 11.3	29.3 ± 1.3	0.0018
Previous contraceptive use (%)	66.7	88.8	0.1691
Previous pregnancies (%)	66.7	72.2	0.7699
Smoking (%)	33.3	22.8	0.7699
TmPO2 (mmHg)	28.4 ± 14.5	48.1 ± 25.1	0.0416

FSD female sexual dysfunction, *BMI* body mass index, *FSFI* female sexual function index, *TmPO2* transmucosal oxygen tension

DIABETE E (DIS)FUNZIONE SESSUALE: *Fattori immunologici*

Hyperglycemia also results in **increase cytokine and chemokine production through TLR activation**.

Glucose can also **alter gene expression and the phenotype profile of immune cells** (eg, monocytes, neutrophils).

High glucose levels exacerbate **free fatty acid-induced monocyte-related inflammation via TLR.**

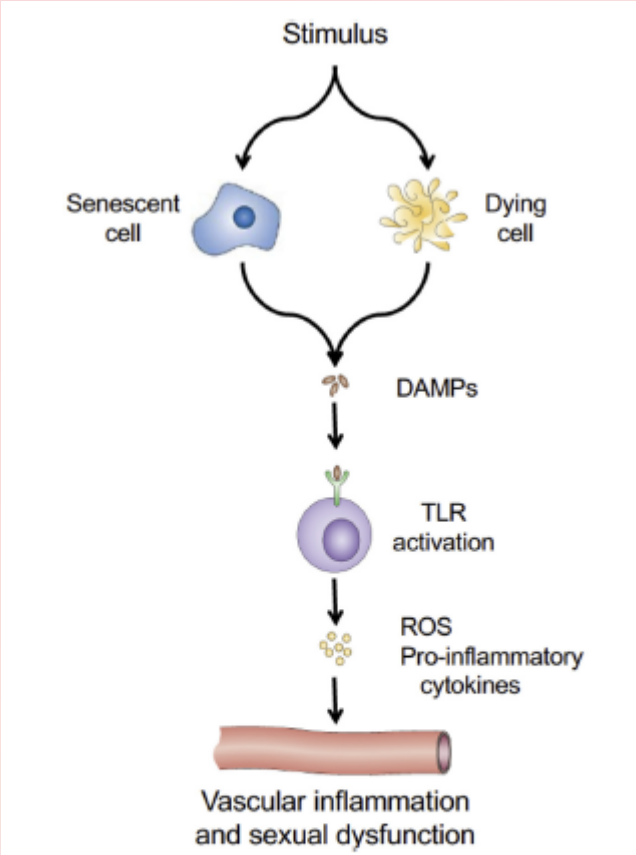


Figure 3. Damage-associated molecular patterns (DAMPs) and vascular inflammation. DAMPs are released or secreted from dying or senescent cells, respectively. Once released, the DAMPs bind to Toll-like receptors (TLRs), leading to the production of reactive oxygen species (ROS) and proinflammatory cytokines. These latter molecules act on the vasculature to cause inflammation and may contribute to penile or clitoral dysfunction. Figure 3 is available in color online at www.smrjsexmed.org.

Calmasini at al, 2019

Endothelin receptor activation causes pudendal artery contraction, resulting in a reduction of blood flow to the clitoris and vagina (as in diabetic rats).

Hyperglycemia is associated with **an increased risk of genitourinary infections, contributing to the PAMP-associated inflammatory state.**

DIABETE E (DIS)FUNZIONE SESSUALE:
Fattori neuronali

Clitoral sensation is driven by pudendal, hypogastric, and pelvic nerves and the erectile tissue is innervated by cavernous nerves from the autonomic plexus.

Upon sexual stimulation, the central nervous system is activated, causing enhanced blood flow to the genital organs and leading to penile erection by relaxation of the CC in males or engorgement and lubrication of the clitoris and vagina in females. Calmasini at al, 2019

- **ridotta sensibilità**
- **neuropatia autonomica, controllo dell'eccitazione**
- **riduzione degli input centrali (amigdala, ipotalamo)**
- **aumento dell'attività simpatica**

Errata lettura degli stimoli sessuali ed errata risposta!!!

DIABETE E (DIS)FUNZIONE SESSUALE:

Cardiovascular Autonomic Neuropathy, Sexual Dysfunction, and Urinary Incontinence in Women With Type 1 Diabetes

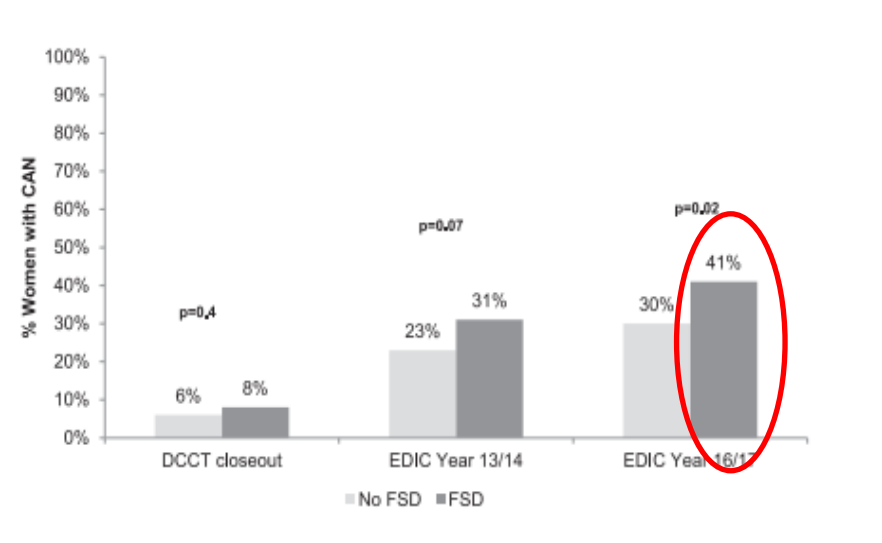
Diabetes Care 2016;39:1587–1593 | DOI: 10.2337/dc16-0059

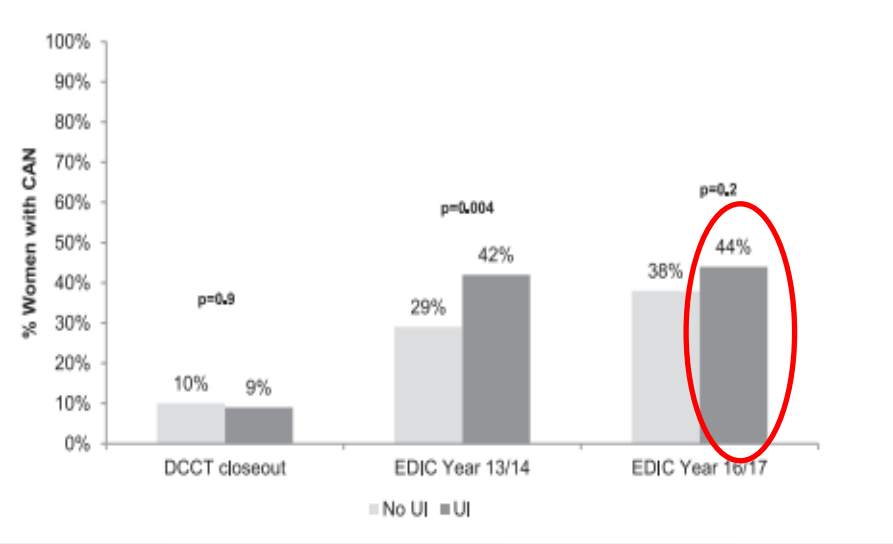
*James M. Hotaling,[1] Aruna V. Sarma,[2] Darshan P. Patel,[1] Barbara H. Braffett,[3] Patricia A. Cleary,[3] Eva Feldman,[4] William H. Herman,[4] Catherine L. Martin,[4] Alan M. Jacobson,[5] Hunter Wessells,[6] and Rodica Pop-Busui,[4] for the Diabetes Control and Complications Trial/ Epidemiology of Diabetes Interventions and Complications Research Group**

CAN included R-R response to paced breathing (R-R variation), Valsalva maneuver, and postural changes (supine-to-stand) in blood pressure measured at baseline

2016

These data demonstrating associations between measures of UI, FSD, and CAN in our study provide new insights into the natural history of various forms of autonomic dysfunction and the role of subclinical changes in measures of CAN that may predict the development of FSD and UI in women with T1DM





DIABETE E (DIS)FUNZIONE SESSUALE:
Comorbidità metaboliche

The literature indicates that **FSD co-varies with MetS** in **premenopausal and postmenopausal women**, with the prevalence of FSD ranging from **19.4% to 36.6%** **and from 37.9% to 54.7%, respectively.**

The number of MetS components also seems associated with **poorer sexual function.**

The strongest reported predictors of SD in women with MetS are triglyceride and fasting glucose levels (vs HB1Ac: ruolo controverso)

In the Rancho Bernardo Study, **waist girth, DM, and hypertension** were associated with **decreased sexual activity**, whereas increased **triglycerides** showed a tight association with **low desire.**

Interestingly, in the cohort of postmenopausal women, **coronary artery disease**—1 of the most important CV end points—was more prevalent in those with **low sexual activity**.

Maseroli et al, 2018

DIABETE E (DIS)FUNZIONE SESSUALE:
Fattori endocrini

- ❑ **Sintesi e metabolismo di ormoni sessuali**
- ❑ **Ipogonadismo**
- ❑ **Ruolo sull'ipotalamo**
- ❑ **Possibile associazione con acromegalia, iperprolattinemia e patologie tiroidee**
- ❑ **Sindrome metabolica**

Bashin et al, 2007

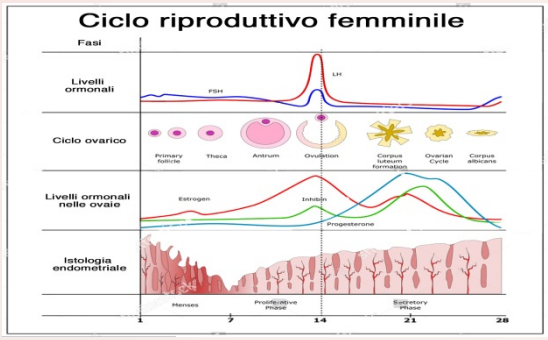
DIABETE E (DIS)FUNZIONE SESSUALE

Sexual Function and Endocrine Profile in Fertile Women With Type 1 Diabetes

ANDREA SALONIA, MD[1]
ROBERTO LANZI, MD[2]
MARINA SCAVINI, MD[2]
MARINA PONTILLO, PHD[3]
ELISA GATTI, MD[2]
GIOVANNA PETRELLA, MD[2]
GIADA LICATA, MD[2]
ROSSELLA E. NAPPI, MD[4]
EMANUELE BOSI, MD[2]
ALBERTO BRIGANTI, MD[1]
PATRIZIO RIGATTI, MD[1]
FRANCESCO MONTORSI, MD[1]

2006

In fase luteale, ridotti livelli di FSFI nella maggior parte dei domini e più elevato distress sessuale



Pattern ormonale differente rispetto ai controlli:

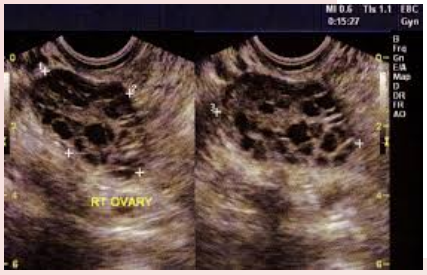
- IN FASE FOLLICOLARE: livelli più bassi di E2, delta4androstenedione, DHEA-S, FT3 e FT4
- IN FASE LUTEALE: più bassi livelli di progesterone ed estradiolo

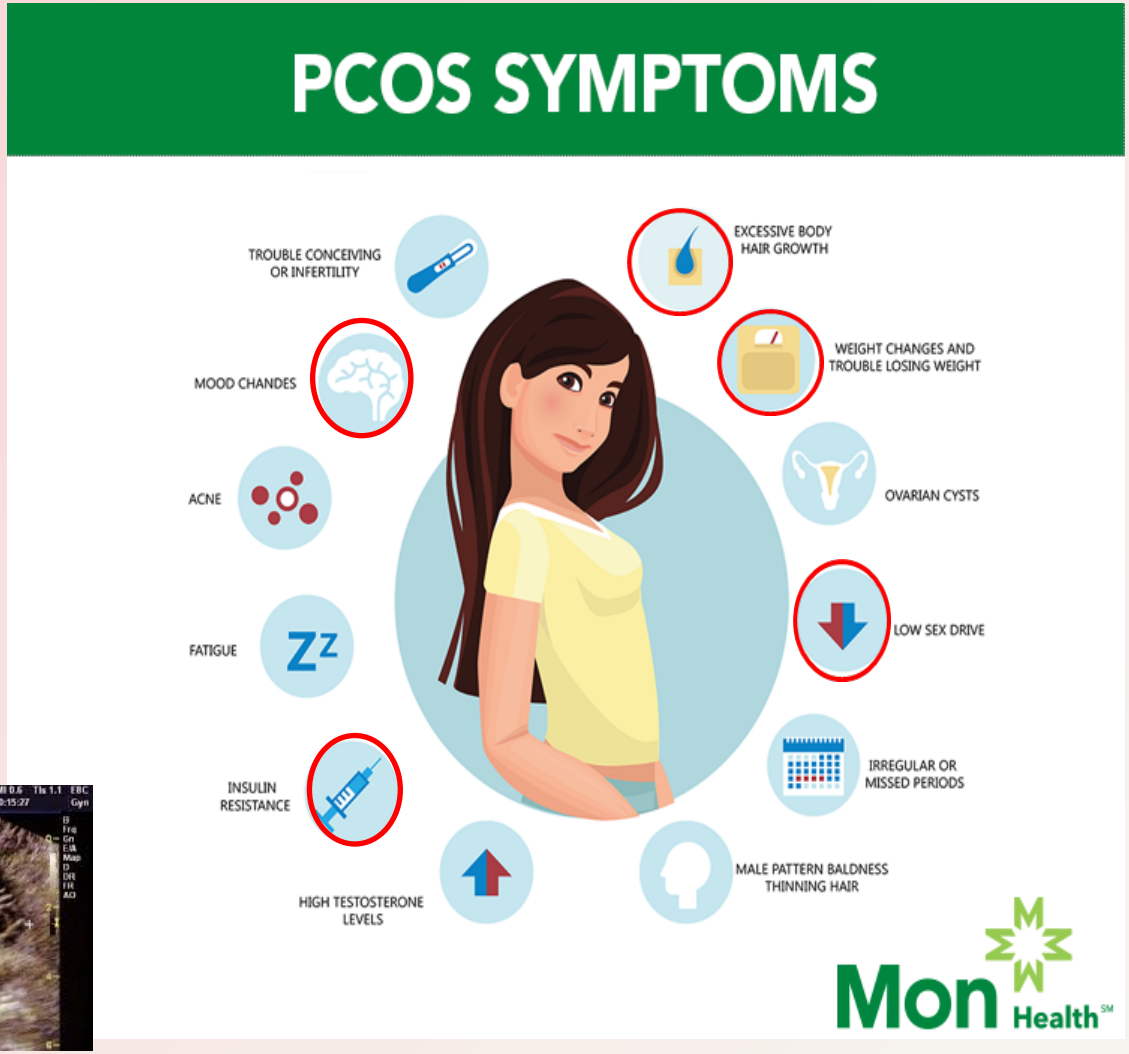
DIABETE E (DIS)FUNZIONE SESSUALE:
Diabete e PCOS a fenotipo metabolico

- Insulino resistenza
- Irsutismo
- Anovulazione
- Infertilità
- Menopausa precoce

− DESIDERIO, ECCITAZIONE
LUBRIFICAZIONE
E SODDISFAZIONE

+ DOLORE





Jannini, 2020

DIABETE E (DIS)FUNZIONE SESSUALE: *Overlap con la menopausa (1)*

Published in final edited form as:
Obstet Gynecol. 2012 August ; 120(2 Pt 1): 331–340. doi:10.1097/AOG.0b013e31825ec5fa.

Diabetes Mellitus and Sexual Function in Middle-Aged and Older Women

Kelli L. Copeland, BA[1], Jeanette S. Brown, MD[1,2], Jennifer M. Creasman, MSPH[1], Stephen K. Van Den Eeden, PhD[3], Leslee L. Subak, MD[1,2], David H. Thom, MD, PhD[4], Assiamira Ferrara, MD, PhD[3], and Alison J. Huang, MD, MAS[1,5]

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2270 donne tra i 40 e gli 80 anni di cui 486 diabetiche

Conclusions

Compared to nondiabetic women, **diabetic women** are more likely to report low overall sexual satisfaction.

Insulin-treated diabetic women also appear at higher risk for problems as difficulty with lubrication and orgasm.

Prevention of end-organ complications may be important in preserving sexual activity and function in diabetic women.

Overlap con la menopausa (2)

Metabolic Syndrome and Sexual Function in Postmenopausal Women

Susan E. Trompeter, MD[a,b], Ricki Bettencourt, MS[c], and Elizabeth Barrett-Connor, MD[c]

2016

	Overall (N=148)	With MetS (N=46)	Without MetS (N=102)	P-value
Desire (N=144)				
Median (IQR)	3.6 (1.2)	3.0 (1.2)	3.6 (1.2)	* 0.0401
N (%)	126 (87.5%)	39 (92.9%)	87 (85.3%)	0.2123
Arousal (N=146)				
Median (IQR)	4.5 (2.1)	3.8 (2.4)	4.8 (1.8)	* 0.0086
N (%)	70 (48.0%)	28 (60.9%)	42 (42.0%)	0.0340
Desire + Arousal (N=142)				
Median (IQR)	7.8 (3.3)	6.9 (3.3)	8.1 (2.4)	* 0.0047
N (%)				
Lubrication (N=133)				
Median (IQR)	4.8 (2.4)	4.4 (2.4)	5.1 (2.4)	0.2858
N (%)	55 (41.4%)	21 (50.0%)	34 (37.4%)	0.1689
Orgasm (N=142)				
Median (IQR)	4.8 (2.4)	4.4 (2.8)	5.2 (2.0)	* 0.0427
N (%)	50 (35.2%)	22 (50.0%)	28 (28.6%)	0.0134
Pain (N=108)				
Median (IQR)	6.0 (1.2)	6.0 (0.8)	6.0 (1.2)	0.3876
N (%)	17 (15.7%)	4 (11.8%)	13 (17.6%)	0.4419
Satisfaction (N=117)				
Median (IQR)	5.6 (1.6)	4.8 (2.4)	5.6 (1.2)	0.1427
N (%)	26 (22.2%)	14 (40.0%)	12 (14.6%)	* 0.0025
FSFI Total (N=97)				
Median (IQR)	27.6 (8.5)	26.7 (8.7)	28.7 (6.6)	0.1419
N (%)	38 (39.2%)	14 (50.0%)	24 (34.8%)	0.1641

Disfunzione sessuale co-esistente in postmenopausa:

- GSM
- Ipoestrogenismo e disfunzione endoteliale
- Vascolarizzazione ridotta per pareti arterie iliache più spesse
- Bassi livelli di estradiolo circolante effetto proinfiammatorio
- Ridotta componente androgenica (aging): low desire, more dysfunction

Calmasini et al, 2019

DIABETE E (DIS)FUNZIONE SESSUALE:
Fattori psichici intra e interindividuali

Diabetes and female sexual health: an ongoing challenge

Katharine D Barnard[1,2] et al 2019
PhD, CPsychol, AFBPsS, Health Psychologist

KEY POINTS

- Sexuality is a defining aspect of oneself. It goes beyond conception care and pregnancy
- Sexual health is an integral part of overall health, well-being and quality of life
- Diabetes has been shown to have a significant detrimental effect on sexual health and well-being
- Women report feelings of isolation, low self-esteem, poor body image and loss of enjoyment or engagement in sexual activity
- It is clear that there is a need for support/resources to be readily available as well as heightened health care professional awareness to help individuals

Variable	Meeking study (%)	Current study (%)
Psychological		
Diabetes has led to a loss of self-esteem	36.0	68.6
Diabetes makes me feel less attractive	34.0	57.8
Diabetes has led to loneliness or isolation	40.0	66.3
Diabetes had led to worry about fertility	31.0	52.7
Diabetes has led to worry about pregnancy	43.0	69.4
Diabetes has led to worry about passing it on to children	75.0	79.5
I have discussed my concerns with a health care professional	66.0	57.4
Medical		
Vaginal infections	23.0	77.9
Dyspareunia	43.0	51.2
General orgasmic problems	47.0	57.4

Question	Difference from others/Isolation/ Stigma/Lack of understanding	Body-image/ Judged/ Presence of technology	Low mood/ Burnout/ Tiredness	Sexual function/ Infection/Loss of enjoyment	Other
Loss of self-esteem	70	81	25	3	26
Feel less attractive	28	140	9	8	17
Loneliness/ isolation	128	5	29	0	17
Negative effect on relationships	75	14	32	22	8

Table 5. Content analyses – questions with summary of free-text key themes, showing number of responses to each theme

DIABETE E (DIS)FUNZIONE SESSUALE:
Fattori psichici intra e interindividuali

Diabetes and female sexual health: an ongoing challenge

Katharine D Barnard[1,2] et al 2019
PhD, CPsychol, AFBPsS, Health Psychologist

258 partecipanti tra i 18-73 anni

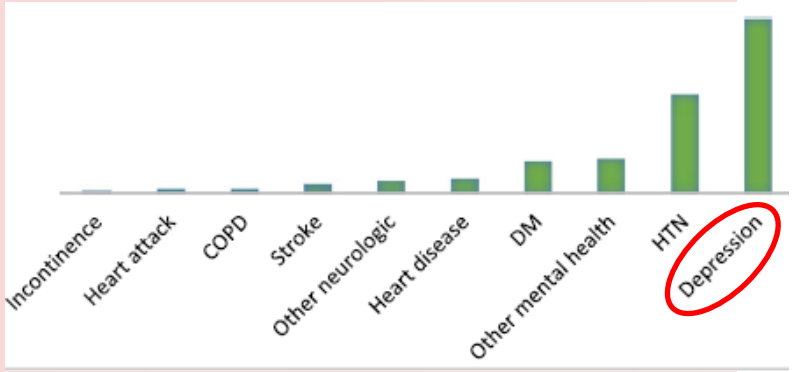
- 70% non chiede aiuto per un problema sessuale
- 80% non è consapevole della possibilità di un trattamento
- 50% non so che i propri problemi sono comuni nel diabete
- 53% ha paura per la fertilità (soprattutto se >35 aa)
- 42% dei loro curanti non discusso con loro del planning della gravidanza
- 76% non risulta influenzato negativamente dalla visibilità del proprio device medico

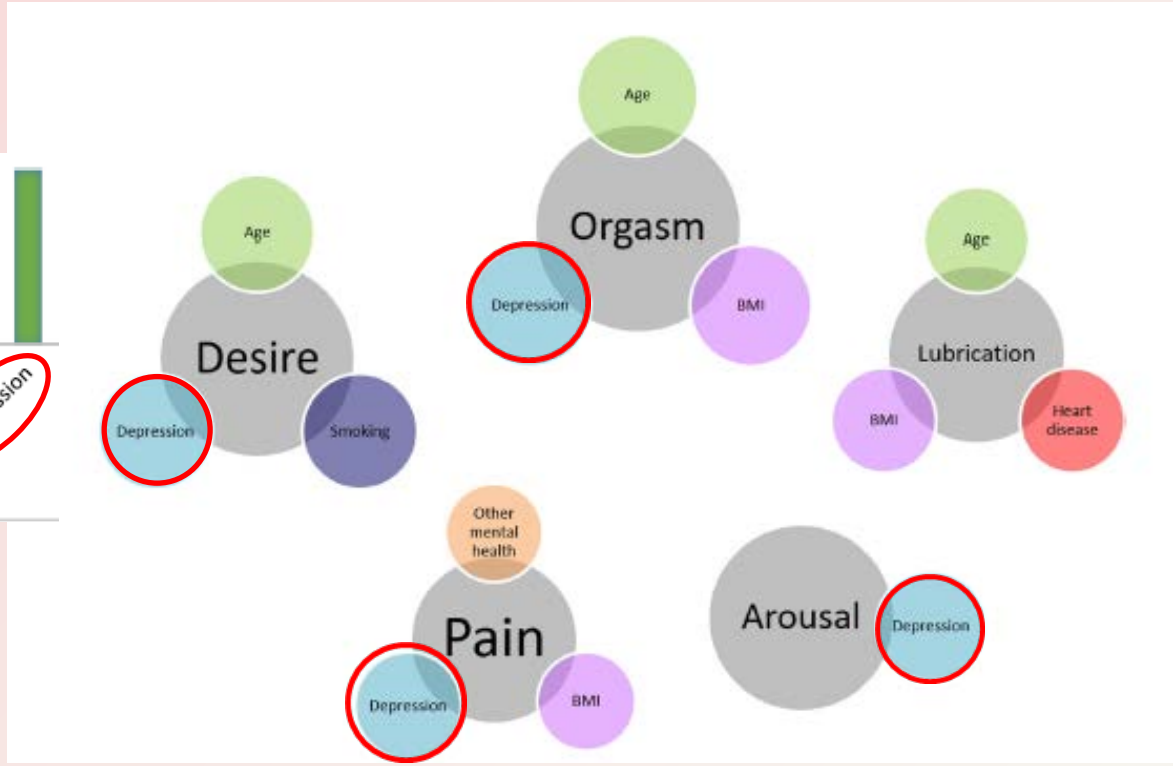
DIABETE E (DIS)FUNZIONE SESSUALE:
Comorbidità psichiche

Association between comorbidities and female sexual dysfunction: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3)

Allison R. Polland[1,2] · Meghan Davis[2] · Alexander Zeymo[3] · Cheryl B. Iglesia[1,2]

Received: 21 March 2018 / Accepted: 31 July 2018 / Published online: 3 September 2018





DIABETE E (DIS)FUNZIONE SESSUALE:
Aspetti peculiari del DM tipo 1 e 2

DM2

- FSD più correlata ad obesità, s.metabolica e complicanze microvascolari
- FSD nel 68% delle donne
- Età perimenopausale
- Farmaci concomitanti (es. antidepressivi SSRI)

DM1

- FSD più correlata allo stato menopausale, depressione e stato psicosociale (relazione con il partner)
- FSD tra il 20 e il 50% (media 35%)
- Donne più giovani
- Maggiore accettazione della patologia cronica (precoci strategie di coping)

Maiorino, 2017

…. MA MOLTO DIPENDE DALLA PRESENZA DI COMPLICANZE:

- **MENO DI UN RAPPORTO AL MESE se cardiopatia, disfunzione renale o neuropatia periferica**

- **Le donne diabetiche con storia di ictus riportano più bassa soddisfazione sessuale**

Copeland, 2012

DIABETE E (DIS)FUNZIONE SESSUALE:
Terapie e funzione sessuale

METFORMINA

- ✓ Migliora la funzione sessuale
- ✓ Meno dolore
- ✓ Più self confidence per miglioramento dei segni di iperandrogenismo
- ✓ Agisce modulando la produzione di kisspeptina e gonadotropine
- ✓ Aumenta il desiderio

Krysiak at al, 2017

INSULINA

- ✓ **CSII** (FSF AS CONTROL SUBJECTS)
- ✓ **MDI**
- ✓ **Ruolo della glucose variability!!**

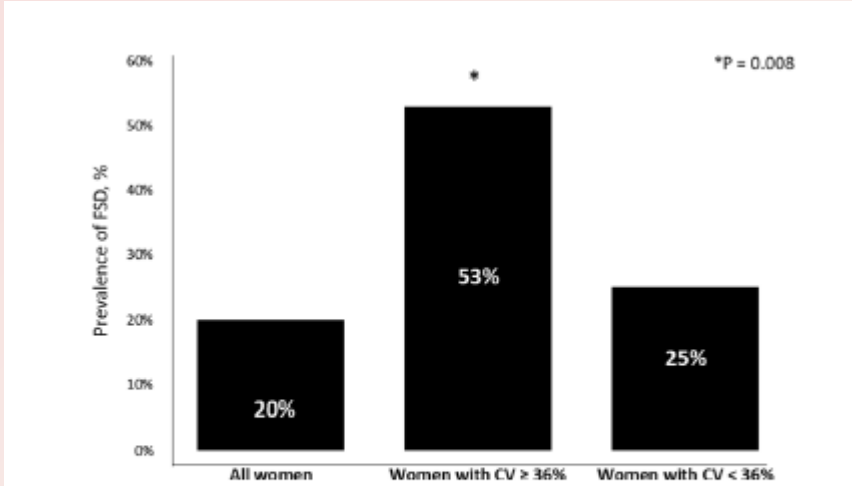


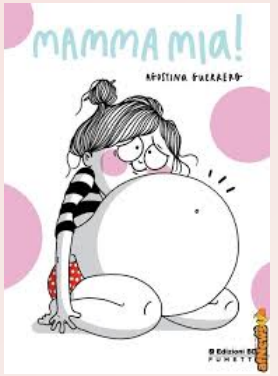
Fig. 1 Prevalence of FSD in overall population and in women with high GV (CV ≥ 36%) and low GV (CV < 36%). *CV* coefficient of variation

Longo, 2020

DIABETE E (DIS)FUNZIONE SESSUALE: *GDM*

Studi contrastanti

Difficile indagare la funzione sessuale in gravidanza (paura per la gravidanza e per il feto, fattori psicosociali)



- ❑ **NON DIFFERENZE RIPORTATE?**
- ❑ **GMD più a rischio di disfunzione sessuale?**
- ❑ **Più probabile FSD nelle GDM obese rispetto alle GDM non obese**

	Normal weight BMI 18.5–24.9 (n = 67)	Overweight BMI≥25 (n = 76)	*P* value
Women with scores ≤26	28 (41.8)	46 (60.5)	0.038**
Mean total score□	24.9±8.0	21.7±9.2	0.029*
Domains			
Desire⁺	4.0±1.4	3.4±1.2	0.007*
Arousal±	3.9±1.4	3.4±1.6	0.052*
Lubrication±	4.5±1.6	3.8±2.0	0.023*
Orgasm±	4.0±1.8	3.6±2.0	0.210*
Satisfaction×	4.4±1.7	3.9±2.1	0.118*
Dyspareunia±	4.1±2.0	3.7±2.1	0.251*

Meireluci Costa Ribeiro et al, 2014

DIABETE E (DIS)FUNZIONE SESSUALE:

DIAGNOSI

- Indagine anamnestica **PATOLOGICA PERSONALE e STORIA SESSUALE**
- **Esame obiettivo**
- Pannello di **esami ematochimici** (profilo lipidico, funzionalità epatica, emoglobina glicata, acido urico, funzionalità renale..)
- Eventuale **studio ormonale** (profilo androgenico, corticosurrene, funzione ovarica..)
- Somministrazione di **questionari validati** per la valutazione della funzione sessuale (FSFI, FSDS, DESIRE, BDI)..

TERAPIA

Stile di vita

- Attività fisica regolare
- Controllo glicemico
- Alimentazione ipoglucidica, dieta mediterranea
- Terapia psicologica di supporto alla coppia e per la self esteem

Trattamento locale o sistemico

- Terapia con idratanti o estrogeni locali se secchezza, ridotta elasticità vaginale e lubrificazione
- Ospemifene
- Inibitori PDE 5 (ruolo dibattuto)
- Flibanserina (non approvato in Europa)
- Testosterone o DHEA-S per HSDD (off label)

DIABETE E (DIS)FUNZIONE SESSUALE:
Prevenzione e couselling giovanile

Adolescents with type 1 diabetes and risky behaviour

2010

AE Scaramuzza (scaramuzza.andrea@hsacco.it), A De Palma, C Mameli, D Spiri, L Santoro, GV Zuccotti

Department of Pediatrics, University of Milano, 'Luigi Sacco' Hospital, Milan, Italy

Keywords
Adolescence, Alcohol, Illicit drugs, Sexuality, Smoking, Type 1 diabetes

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27 October 2009; revised 2 March 2010; accepted 26 March 2010.

DOI:10.1111/j.1651-2227.2010.01813.x

ABSTRACT

Aim: The aim of the student is to assess whether adolescents with type 1 diabetes mellitus (T1DM) in Italy differ from their healthy peers in regard to risky behaviour.

Methods: Data were collected from 215 patients, aged 14 ± 2 years with a mean disease duration of 7 ± 5 years. The control group was comprised of 464 healthy adolescents recruited among high school students. Each patient completed an anonymous confidential questionnaire to determine the prevalence of sexual behaviour, alcohol and tobacco consumption, illicit drug use, and, among patients with diabetes and frequency of mismanagement related to diabetes care.

Results: Compared with controls, subjects with diabetes showed a similar rate of sexual intercourse among males and lower rates among females (34.8% vs 35.5%, p NS and 29.4% vs 41.4%, $p < 0.05$, respectively). Males in the diabetes group reported a higher rate of tobacco use, whereas females showed similar or higher rates of use for every illicit drug studied. Among patients with diabetes, those who are engaged in risky behaviour showed a higher rate of treatment mismanagement (76% vs 34%, $p < 0.01$).

Conclusion: Adolescents with T1DM are as likely as their healthy peers to engage in risky behaviour, indicating the potential benefit of anticipatory guidance concerning glycaemic control and increased risk of acute and chronic complications.

DIABETE E (DIS)FUNZIONE SESSUALE:
Prevenzione e couselling giovanile

Long-Term Effects of the Booster-Enhanced READY-Girls Preconception Counseling Program on Intentions and Behaviors for Family Planning in Teens With Diabetes

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Our point is not that having sex, masturbating or being gay/lesbian per se is risky or dangerous, but that a dialogue with teens, beyond discussions regarding insulin dose adjustment to include education concerning risky behaviour, could help them proceed toward adulthood in the safest way possible.

Starting Preconception Counseling at puberty is imperative!!!

DIABETE E (DIS)FUNZIONE SESSUALE:

Take home messages!!!

- **Sessualità femminile multisistemica**
- **Disfunzione sessuale multifattoriale nel diabete**
- **Differenze correlate all'età**
- **Valenza psicosociale e culturale del DM e le differenze tra DM1 vs DM2**
- **Depressione fattore prognostico negativo assoluto**
- **Necessaria maggiore consapevolezza medica del disturbo sessuale nella donna diabetica anche per ruolo predittivo della FSD su diabete e CVD**
- **Necessità del counselling sempre, ma soprattutto nelle pazienti giovani (contraccezione, rischio ostetrico..)**

Endogin, 2020

GRAZIE PER L'ATTENZIONE!