

*"Man survives earthquakes, experiences the horrors of illness, and all the tortures of the soul. But the most tormenting tragedy of all time is, and will be, **the bedroom**"*

--Tolstoy



- ### Today's Topics
- Healthy vs Disease Sexual Response
 - Prevalence and Causes
 - Assessment
 - Treatment Options
 - Communication

Let's Talk About Sex: Everything a Diabetes Educator Needs to Know

Janis Roszler, LMFT, RD, LD/N, CDE, FAND Donna Rice, MBA, BSN, RN, CDE, FADE

Why Learn About This?

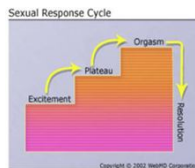
Your thoughts....

1. _____
2. _____
3. _____
4. _____

Why Learn About This?

- Quality of life issue for people w diabetes
- May indicate other serious health concerns
- Sexual complications may distract pts from self-management
- You can provide important guidance
- Patients may only speak to YOU

Healthy Female Sexual Response



- Secretion of lubricating moisture
- Relaxation of pelvic floor muscles
- Engorgement of labia and clitoris

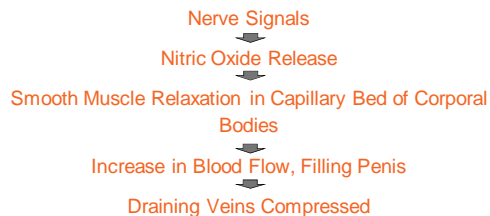
Jovanovic L. *Diabetes Care.* 2002;25: 787-788.

Why Speak to Patients?

- Survey (n-1592)
- 72% of women want to speak with their health care professional about their sexual concerns
- 73% preferred if the health care provider initiated the conversation
- Many are reluctant - they believe providers may lack training and knowledge to identify sexual issues

Goldstein I, Kim NN, Clayton AH, et al. Hypoactive sexual desire disorder: International Society for the Study of Women's Sexual Health (ISSWSH) expert consensus panel review. *Mayo Clin Proc.* 2017;92(1):114-28

Healthy Male Sexual Response




Rajfer J, et al. 1992. *N Engl J Med*

The Basics

The Birds & The Bees...


Male Diabetes-Related Sexual Problems?

1. _____
2. _____
3. _____
4. _____




Female Diabetes Sexual Problems?

1. _____
2. _____
3. _____
4. _____



Male Sexual Dysfunction

- Erectile Dysfunction(ED) - Inability to achieve or maintain erection suitable for intercourse
- Lack of desire
- Performance Anxiety
- Decreased Testosterone-Low T

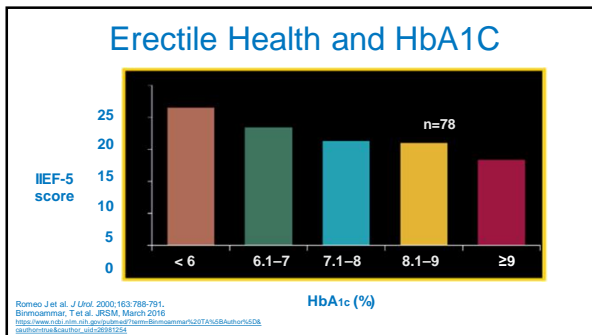


Jardin A, et al, eds. *Erectile Dysfunction*. Plymouth, United Kingdom: Health Publication, Ltd, 2000:711-726.

Female Sexual Dysfunction (FSD) ♀

Desire	Satisfaction	
Pain		Orgasm
Arousal (infections)		(Vaginal)
Lubrication		

J Endocrinol Invest (2017) 40:169-177



Female Sexual Dysfunction (FSD)

Imbalance in...

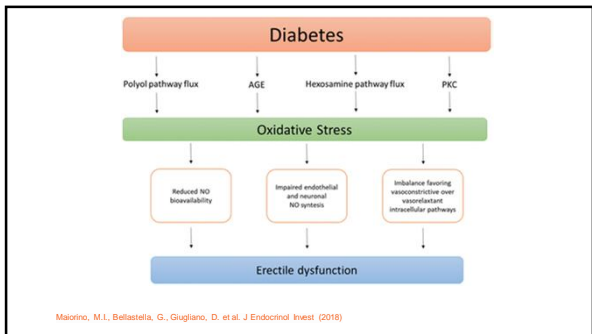
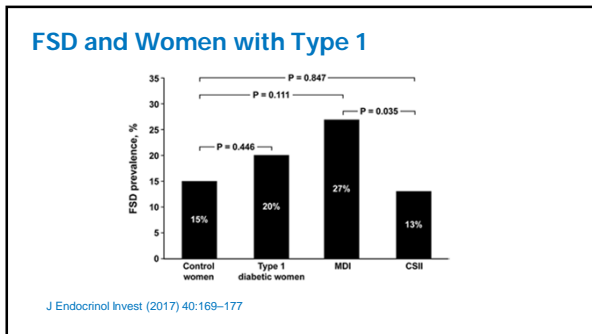
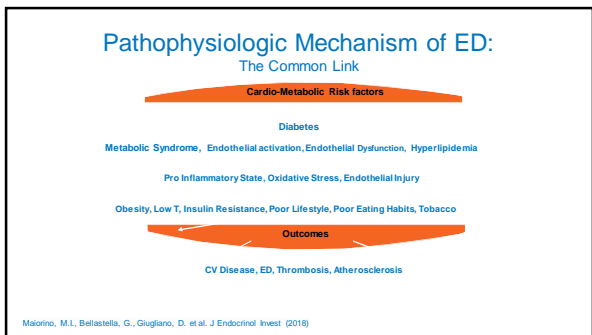
- **Central sexual excitatory pathway** (dopamine, norepinephrine, melanocortin, and oxytocin)
- **Sexual inhibitory pathway** (serotonin, opioid, endocannabinoid, and prolactin)
- Additional contributing factors
 - psychological/relationship
 - medical
 - medications
 - menopause

Goldstein, Irwin et al. Hypoactive Sexual Desire Disorder Mayo Clinic Proceedings (2017) 92:114 - 128

Prevalence In People with Diabetes

Men (ED)	Women (FSD)
35-90%	Type 1 (~20%) Type 2 (~50%)
Onset 10-15 years earlier than general population	Menopausal (63.9%)
Prevalence ~3.5 times higher than healthy men	Non-menopausal (41.0%)

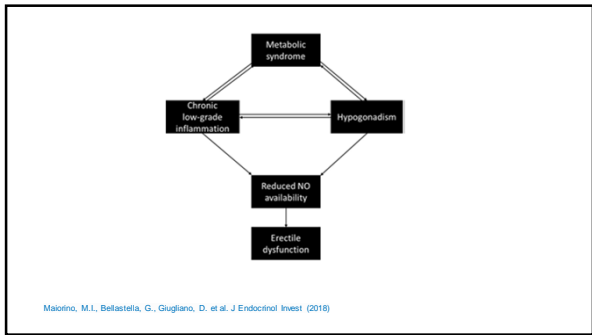
K. Eppink, et al. Int J Impot Res (2010) 22:179-184
Mairino M, et al. J Endocrinol Invest (2017) 40:169-177
Hawker V, Ford D, Conn T, et al (2007). Diabet Med 24:1186-1192



Inflammation

- Metabolic diseases (obesity, diabetes, etc) assoc w chronic low-grade inflammation
- Possible mediator of endothelial dysfunction/cardiovascular dx
- Visceral adiposity releases inflammatory cytokines
- Cytokines → endothelial dysfunction, inhibits anti-atherogenic factors

Mairino, M, et al. J Endocrinol Invest (2017) A Ponholzer, et al. Int J Impot Res (2008) 20:100-104



Additional Causes of ED?

1. _____
2. _____
3. _____
4. _____

No Known Relationship with FSD

A1c
 Fasting Glucose
 Duration of diabetes
 Blood Pressure
 Insulin Dose

K. Esposito, et al. Inter J Impot Res (2010) 22:179-184 (2010); J Endocrinol Invest (2017) 40:169-177; Pak J Med Sci. 2017 May-Jun; 33(3): 732-737; Diabetes Care. 2008;31:1580-1581.

Additional Causes of ED


Medication Side Effects	Kidney Disease
High BP	Neuropathy
Aging	Alcohol Abuse
	Emotional/Relationship Issues

Sharifi F, Asghari M, Jaberl Y, Salehi O, Mirzamohammadi F., ISRN Endocrinol. 2012;2012:502353

Assessment

When assessing patients, what clues may tip you off?

1. _____
2. _____
3. _____
4. _____



Possible Relationship with FSD

<u>Type 2</u>	<u>Type 1</u>
Obesity	Menopausal Status
Metabolic Syndrome	Depression/Mental Health Status
Microvascular complications	independent predictors
	Marital Status (??)

J Endocrinol Invest (2017) 40:169-177

7 Red Flags

- Neuropathy
- Cardiovascular/pulmonary issues
- Hyperlipidemia
- Hyperglycemia
- Psychogenic Issues
- Hormone Health
- Relationship Challenges

Sharifi F, Asghari M, Jaberl Y, Salehi O, Mirzamohammadi F., ISRN Endocrinol. 2012;2012:502353

Assessment

- | | |
|--------------------------|---|
| Obesity | Life Stress - physical, emotional |
| A1c, BP, Lipid profile | |
| Shortness of breath | Lifestyle - smoking, drinking, recreational drugs, activity |
| Medications/side effects | Shyness when asked about bedroom concerns |
| Diabetes Distress | |

Rice, D. Diabetes and Erectile Dysfunction – A Quick 'n' Easy Handbook for The Diabetes Educator. 2004. Bella Vita Publications, Brighton, MI.

Hyperlipidemia

- Elevated lipid levels can:

Interfere with blood flow to pelvic area.



Neuropathy (autonomic/peripheral)

May be evidence of nerve damage that can...

- interfere with brain/penis communication
- affect ability to lubricate or experience orgasm



Hyperglycemia

- Affects blood vessel integrity
- Desire
- Fatigue
- Headaches, etc.
- ED
- Vaginal Infections



Cardiovascular Issues

- Circulation issues can:


Interfere with clitoral engorgement needed for sexual response


Slow/prevent adequate blood flow to penis




Psychogenic Issues


- Poor self-image
- Diabetes Distress
- Depression
- Fear of pregnancy, pain
- Relationship issues
- Brain is most important sexual organ

 **Hormone Health**



ED - A Window into Other Physical Issues



 **Low-T Related Problems**

- Libido
- Erectile function
- Energy level
- Mood
- Abdominal obesity
- Body composition


Mohamed Abdelmassouh <https://doi.org/10.1016/j.ajme.2018.01.002>

Sexual Probs - Window into Issues That Affect Educational Goals

Diabetes distress

Lack of family/partner support

Lack of focus on diabetes self-management

 **Menstrual Cycle**

- Type 1 - during luteal phase (From day after ovulation until day before next period. ~10-16 days):
 - Decreased arousal
 - Impaired ability to orgasm
 - Increased discomfort/pain during sexual penetration
- Decreased sexual function independent of mood, not influenced by glycemic control

Salonia A, et al. *Diabetes Care*. 2006; 29: 312-316.

Couple's Issues

- Emotional
 - Poor communication
 - Fear of failure (sexual performance)
 - Anger/Resentment of diabetes
 - Embarrassment (pump use, erotica, request for change in sexual practice, etc.)
 - Fear of pregnancy

Couple's Issues

- Physical
 - Inability to satisfy or be satisfied
 - Blood glucose swings
 - Self-image issues
 - injection/pump bruising
 - Weight
 - Painful intercourse

Treatments

- **Modify reversible causes**
 - Medication change or discontinue
 - Lifestyle modification
- **First Line Therapy (1999)**
 - Oral erectogenic agents
 - Vacuum constriction devices
 - Couples/sexual therapy

Process of Care Consensus Panel *Int J Impot Res.* 1999;11:59-74.

Treatments For Men

Treatments

- **Second Line Therapy (1999)**
 - Intracavernosal self-injection
 - Intraurethral alprostadil
- **Third Line Therapy (1999)**
 - Surgical prosthesis
 - Vascular reconstruction

Process of Care Consensus Panel *Int J Impot Res.* 1999;11:59-74.

Treatments?

1. _____
2. _____
3. _____
4. _____



2018 Erectile Dysfunction Algorithm

AUA - American Urological Association

Use shared decision-making framework; identify options based on patient/partner values and priorities

Choose from:

PDE5i, Vacuum devices, Intraurethral Alprostadil, Intracavernosal Injections, Penile Prosthesis

Lifestyle Modification

Stop smoking

Limit alcohol

Mediterranean Diet

Common Side Effects of PDE5 Inhibitors

- ◆ Headache
- ◆ Facial flushing
- ◆ Dizziness
- ◆ Upset stomach
- ◆ Temporary vision changes
- ◆ Muscle aches
- ◆ Prolonged erections

Oral erectogenic agents – PDE5 Inhibitors Viagra®, Levitra®, Cialis®

Generic Name	Brand Name	Effect with meals (High Fat)	Dose before sex	Starting Dose	Duration of Action	Dose range (mg)
Sildenafil	Viagra	yes	30 min-4 hours	50	6-8 hours	25-100
Vardenafil	Levitra, Staxyn	yes	1 hour	10	6-8 hours	5-20
Tadalafil	Cialis	no	30 minutes	10	24-36 hours	5-20

Oral Agents – Tips

- ◆ Start with low dose (25-50mg). Take twice before trying higher dose
- ◆ Take with light, low fat meal or on empty stomach
- ◆ May be used with vacuum pump
- ◆ Rise slowly after sex to avoid dizziness and ortho-static hypotension

Oral Agents - Effectiveness?

- Men with DM are less responsive to PDE5 inhibitors
- Works in ~60%

Francis SH, Corbin JD. PDE5 inhibitors: targeting erectile dysfunction in diabetics. *Curr Opin Pharmacol*. 2011 Dec; 11(6):683-8.

Contraindications

Nitrate Therapy
 Hepatic or renal disease
 Geriatric men
 Alcoholism
 Hypertension therapy

Constriction Rings

Worn at the base of the penis. Helps keep the blood inside maintains the erection

Comes in different styles and shapes-

Consider 3 factors:

- Size of the band
- The amount of tension
- Amount of displacement



Vacuum Pump

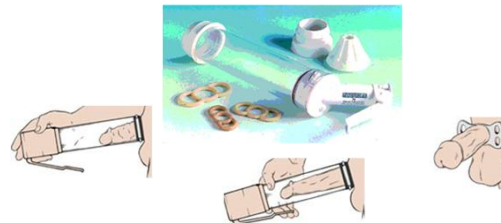
Creates partial vacuum which draws blood into the corpora cavernosa.



Constriction rings – Tips

- Education is critical
- Try different sizes
- Use warmed lubricant to remove ring
- Shave if have discomfort from hair pulling when removing ring
- Leave on for maximum of 30 min.
- Penis may feel cool to touch/blue color
- Do not fall asleep

Vacuum Erection Device



Band Sizing Calculator

<https://www.vitalitymedical.com/guides/impotence/what-size-penis-tension-band-should-i-get>

- Large: Between 3/4 - 7/8 inches
- Medium: Between 1/2 - 3/4 inches
- Small: Between 3/8 - 1/2 inches

Vacuum Pump

- User and partner education is a MUST
- Different styles and sizes-manual and battery operated models
- Set expectations - erections are different!!!
 - Wobbly at the base so need to support it with insertion
 - Bluish in color
 - Cold to touch

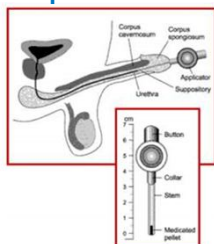
Vacuum Pump - Tips

- Can be awkward - assess for dexterity and hand strength
- Don't leave constriction band on for more than 30 min
- May need 2 constriction bands
- Use lubricant!
- Shaving, lying back or down helps achieve tighter seal (helps with large abdomen)
- **Practice makes perfect**

Intraurethral Alprostadil- Tips

- Urinate prior to insertion. The small amount of urine left in the urethra will help dissolve the suppository
- The suppository is about half the size of a grain of rice. Lubricate the applicator and tip of penis with KY jelly
- Insert into the urethra using a plastic applicator
- To help dissolve the suppository, roll penis between your hands for 10-45 seconds
- Sit, stand, or walk for 10 minutes to boost blood flow to your penis to help with an erection while holding your penis in an upright position

Intraurethral Alprostadil



Injection Therapy



Injectable Alprostadil

Creates very natural looking erection

Can be used 3 times per week

Two FDA approved medications - Caverject impulse and Edex

Tri-Mix made in specialty pharmacies (not FDA approved)

Prostaglandin (PGE 1)

Papaverine

Phentolamine

Intraurethral Alprostadil - Tips

Recommended for daily use (1x/24h)

Erections starts in 5-30 minutes after administration

Partners should avoid oral sex


Wear condom if female partner experiences vaginal burning

Do not use if partner is pregnant

Injection Therapy - Tips

- Education for patient and partner critical for success
- 80 percent of men in clinical trials achieved firm erections
- Individualized dosage determined for each patient's needs
- Works for men with a broad range of medical conditions

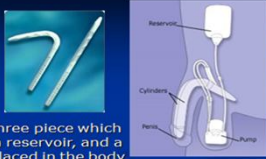
Support Sleeve



- No erection necessary. Supports flaccid penis
- Effective in men with severe chronic disease
- Position matters - partner may do better on top and can help with insertion
- Firmly support penis at the base
- Different sizes available
- Dispose after single use


Penile Implants

- Rigid or Inflatable Implant




- The most common is the three piece which consists of two cylinders, a reservoir, and a pump that are surgically placed in the body
- The two cylinders are inserted in the penis and connected by tubing to a separate reservoir of fluid
- The reservoir is implanted under the abdominal muscles
- A pump sits under the loose skin of the scrotal sac, next to the testicles

Treatments for Low Testosterone



- Injections**
 - testosterone enanthate
 - testosterone cypionate
- Pills**
 - testosterone undecanoate
- Patches**
- Gel**

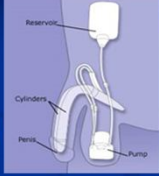
Buccal Tablets



Bhasin S, et al. J Clin Endocrinol Metab. 2006;91(16):1995-2010.

Penile Implant

- To inflate the prosthesis, the man presses on the pump.
- The pump transfers fluid from the reservoir to the cylinders in the penis, inflating them.
- Pressing on a deflation valve at the base of the pump returns the fluid to the reservoir, deflating the penis.
- Patient and partner education is a must!
- Blood sugar control is a must!




Rice, D., Diabetes and Erectile Dysfunction - A Quick 'n' Easy Handbook for The Diabetes Educator, 2004, Beta-Vita Publications, Brighton, MI.

Penile Prosthesis

- Surgically implanted
- One brand expands GIRTH and LENGTH - up to 25% in length
- Firm, rigid erection that lasts as long as desired
- Natural flaccid appearance when deflated
- Low failure rate, device lasts about 10 years
- Complication rate low around 3% (pain, infection, post-surgery bleeding)

Carson CC II, Mulcahy JJ. J Urol 2011 Feb; 185(2):614-8 edure.org

Implants



Treatments For Women

- ### Treatments
- Self-stimulation
 - Individual/Couple's therapy
 - Sensate Focus exercises
 - Cognitive Behavioral Therapy
 - Mindfulness
 - Device - clitoral vacuum/vibrator

Treatments?

1. _____
2. _____
3. _____
4. _____




- ### Treatments
- Don't follow fad diets
 - Don't drastically limit calories
 - Don't skip meals
 - Exercise
 - Maintain healthy BG level
 - Delegate tasks
 - Get plenty of rest

- ### Treatments for Women ♀
- Mediterranean Diet (type 2)
 - Water-based lubricant
 - Ospheña/Intrarosa
 - Estrogen therapy
 - Testosterone therapy* (off label for post-menopausal women)
 - Change depression meds
- *Goldstein, Irwin et al. Hypoactive Sexual Desire Disorder. Mayo Clinic Proceedings. (2017) 92:114 - 128


- ### Treatments For Women
- **Reliable birth control**
 - **Viagra (?)**
 - ***Buspirone** - serotonin 1A partial agonist for generalized anxiety disorder or the short-term relief of symptoms of anxiety. 58% reported an improvement in sexual function
 - ***Bupropion** - norepinephrine-dopamine reuptake inhibitor, is approved as an antidepressant and a treatment for smoking cessation
- Goldstein, Irwin et al. Hypoactive Sexual Desire Disorder. Mayo Clinic Proceedings. (2017) 92:114 - 128

Female “Viagra” Flibanserin (Addyi)



- FDA approved w boxed warning: increased risks of “serious hypotension and syncope” with concomitant use of alcohol.
- Side effects: fatigue, nausea, insomnia, anxiety, constipation, abdominal pain, menstrual spotting, vertigo, dizziness and fainting
- Underestimates women’s needs – focuses less on libido and more on woman’s willingness to use a drug
- Stop after 8 weeks, if no change

Treatments For Both

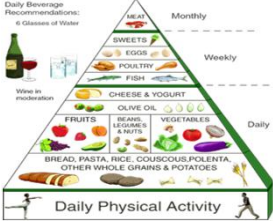


Future Meds

- **Tibolone.** Synthetic steroid used in Europe and Australia to treat postmenopausal osteoporosis. Not FDA approved - increases risk of breast cancer and stroke
- **Phosphodiesterase inhibitors.** Successful with ED, not as effective with FSD.
- **Bremelanotide** in phase 2 studies

Goldstein, Irwin et al. Hypoactive Sexual Desire Disorder Mayo Clinic Proceedings (2017) 92:114- 128

Anti-Inflammatory Mediterranean Diet



♂ ♀

Daily Beverage Recommendations: 6 Glasses of Water

Monthly: MEAT

Weekly: SWEETS, EGGS, POULTRY, FISH

Wine in Moderation

Daily: CHEESE & YOGURT, OLIVE OIL, FRUITS, LEGUMES & NUTS, VEGETABLES

DAILY: BREAD, PASTA, RICE, COUSCOUS, POLENTA, OTHER WHOLE GRAINS & POTATOES

Daily Physical Activity

Kegels???



1. Tighten your pelvic floor muscles and hold contraction for five seconds (to locate muscles, stop urination midstream)
2. Relax for five seconds
3. Repeat four or five times in a row.
4. Repeat three times a day. Goal - hold 10 for seconds and relax for 10 seconds between contractions.

<https://www.mayoclinic.org/healthy-lifestyle/womens-health/in-depth/kegel-exercises/art-20045263> Accessed 5/7/18

Men (T2) - Mediterranean Diet

- High use of virgin olive oil, vegetables, fruits, moderate wine intake, whole grains, nuts, fiber and fish associated with lower risk and severity of ED, mainly in type 2 DM
- Delays deterioration of sexual activity
- Reduced inflammatory components
- Improved lipid and glucose metabolism
- Increased antioxidant defenses
- Raised arginine levels which could raise nitric oxide activity that improves erectile function
- Lycopene (tomatoes) contains anti-inflammatory properties that helps prevent vascular dysfunction in ED, improves NO availability, and normalizes aortic vasoconstriction

Francesco DS and Tenaglia RL. *Curr European J Urol*. (2017); 7(2): 185-187.

Women (T2) - Mediterranean Diet

- High adherence to MD, low prevalence of FSD
- Effect on individual FSD symptoms small, but sum produced significant increase in level of satisfaction.
- Mechanism unclear
 - Dietary fiber may have anti-inflammatory role
 - Fiber along with other anti-inflammatory components influences transient oxidative stress

Giugliano F et al. J Sex Med. 2010 May;7(5):1883-90.

How Do You Discuss This Topic?

1. _____
2. _____
3. _____
4. _____

Treatments



- Rest/limit schedule
- Physical activity
- Reliable contraceptive
- Couples Therapy
- Weekly dates
- Redefine pleasure
- Counsel expectations
- Mood setting techniques
 - o Cuddling
 - o Schedule intimacy
 - o Erotic media
 - o Aphrodisiacs...

Roszlter J and Rice D (2007) Sex and Diabetes - For Him and For Her. ADA

Tips to facilitate dialogue

Posture and language

Ask open-ended questions with silences that encourage the patient to speak

Use words and body language that put the patient at ease

Maintain an open, non-defensive body posture

Sit and maintain eye contact

Avoid nervous gestures

Your Comfort Level

On a scale of 1-10

How easy is it for you to talk about the



Choose language appropriate to the age, ethnicity, and culture of the patient

Questions:

Do you have any sexual concerns you would like to discuss?

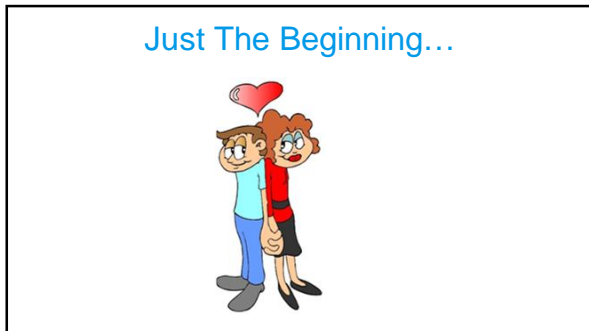
Are you satisfied with your current sexual relations?

Please describe your sexual problem

What distresses you the most about this sexual problem?

Tell me about [it] are probably the four most powerful words in medicine

Rochester-Eyegukan, C. & Meade, L. Diabetes Ther (2017) 8: 991



Disclosure to Participants

- **Notice of Requirements For Successful Completion**
 - Please refer to learning goals and objectives
 - Learners must attend the full activity and complete the evaluation in order to claim continuing education credit/hours
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