Erectile Dysfunction and Its Common Problems in Daily Practice

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Sexual Dysfunction

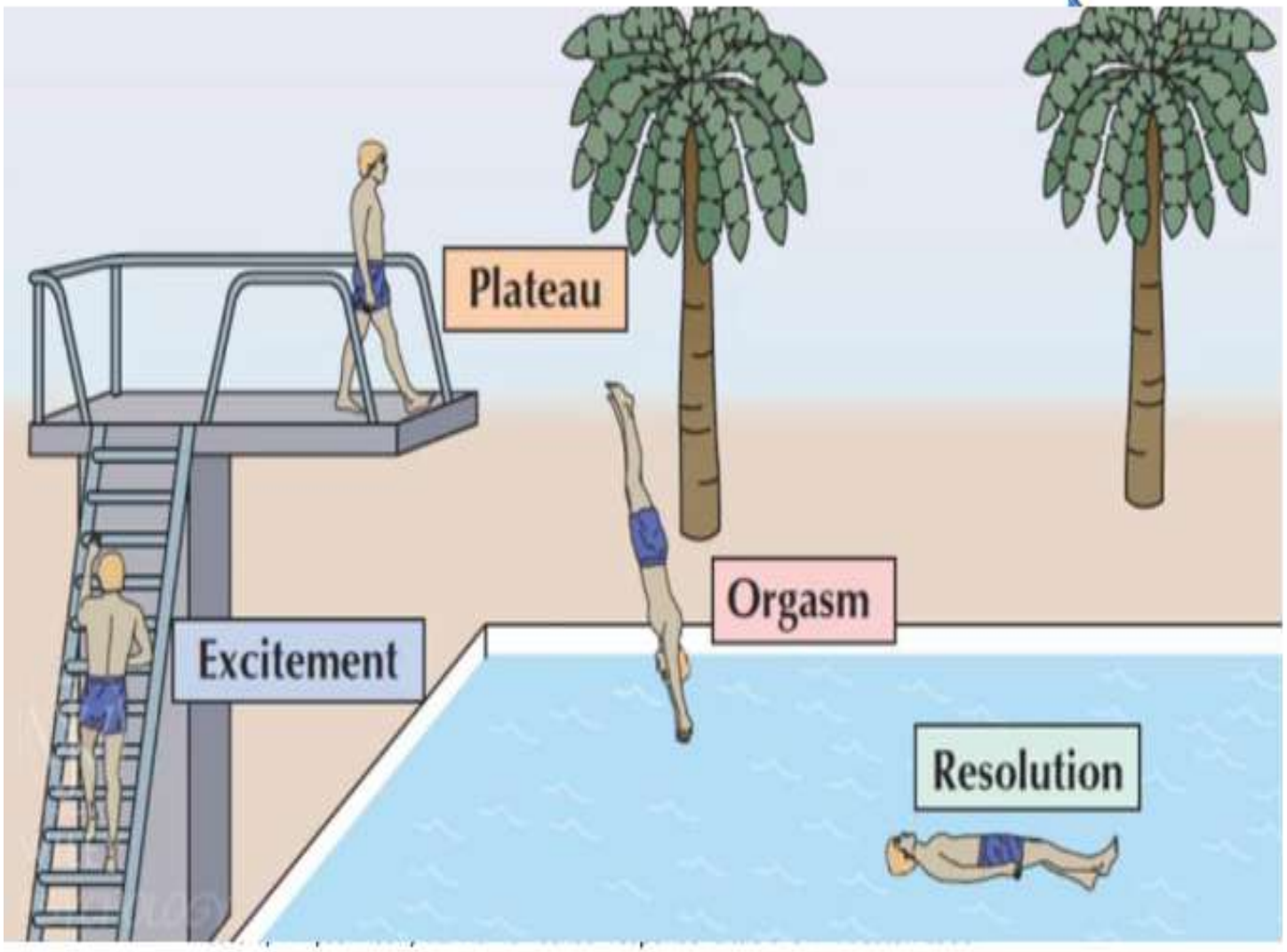
- Sexual dysfunction is a common, but still poorly understood problem and mismanaged of all medical disorders
- Factors:
  - Ignorance, myths, superstition, guilt and the stigma and taboo attached to anything sexual in the minds of the laity
  - Another myth is that sexual problems are just part of normal aging, with no solutions, so why bother talking to doctor about it?
  - Abysmal sexual ignorance among most doctors who continue to believe that impotence is something that is largely psychological in origin

CP Wong, Common Sexual Problems in the Elderly, www.hkgerisoc.org, retrieved 13 January 2010
Mcnicolls A. GERIATRICS FOR THE PRACTICING PHYSICIAN 2008;91 (10): 321-2

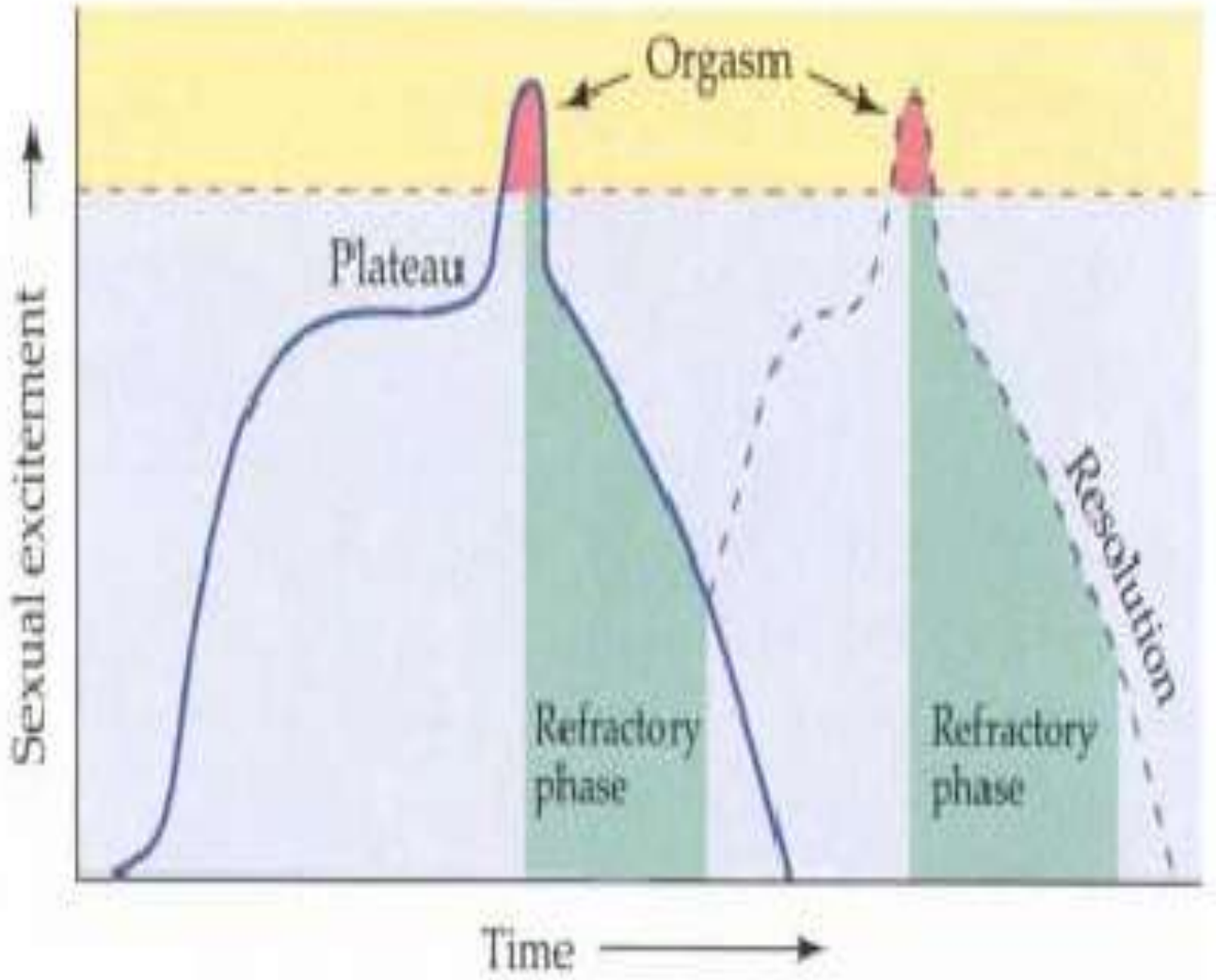
What is a Sexual Response Cycle?

Series of emotional and physical changes that occur as a person becomes sexually aroused and participates in sexually stimulating activities including intercourse and masturbation

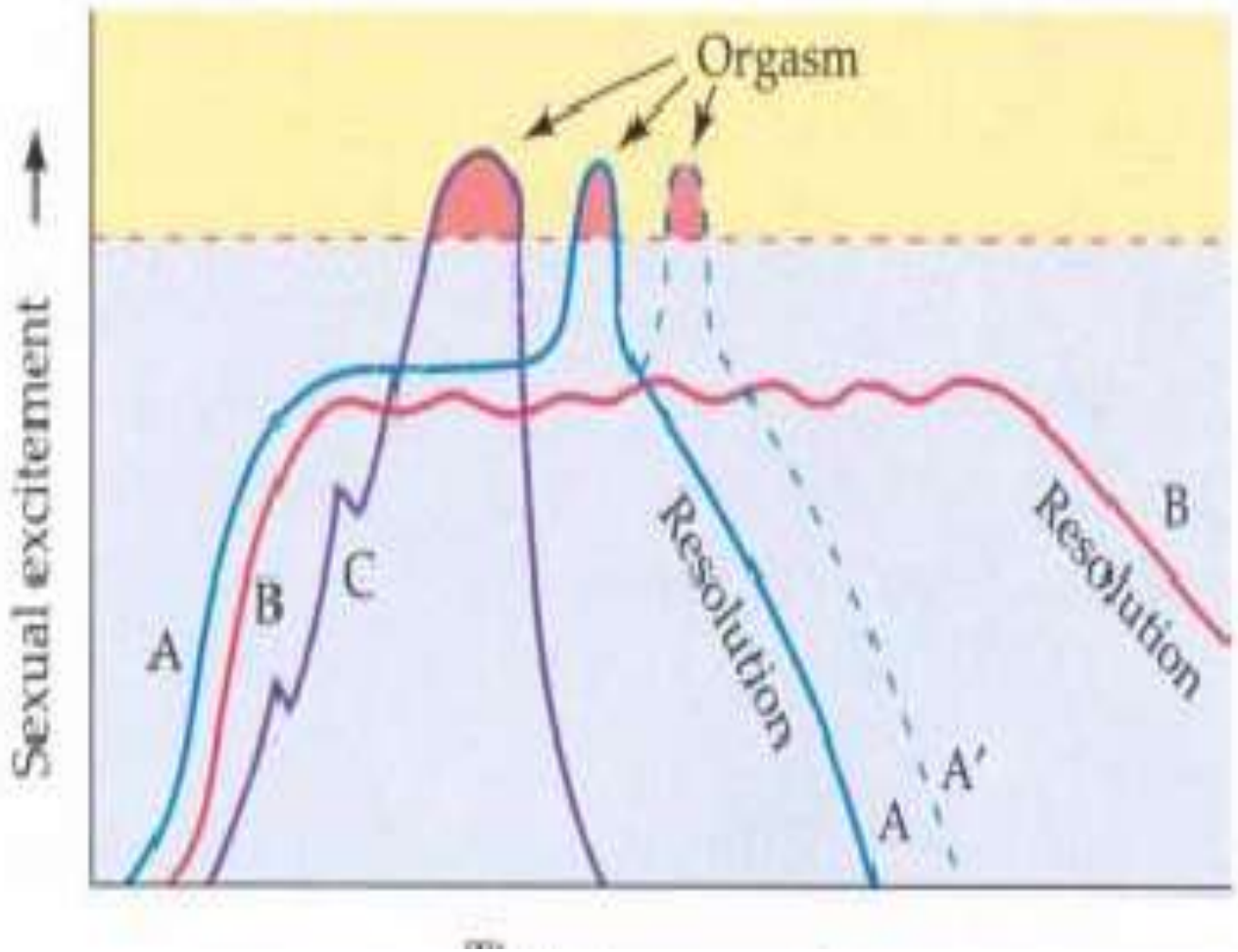
Masters & Johnson linear model



(a) Male


Orgasm
Plateau
Resolution
Refractory phase
Refractory phase
Sexual excitement
Time

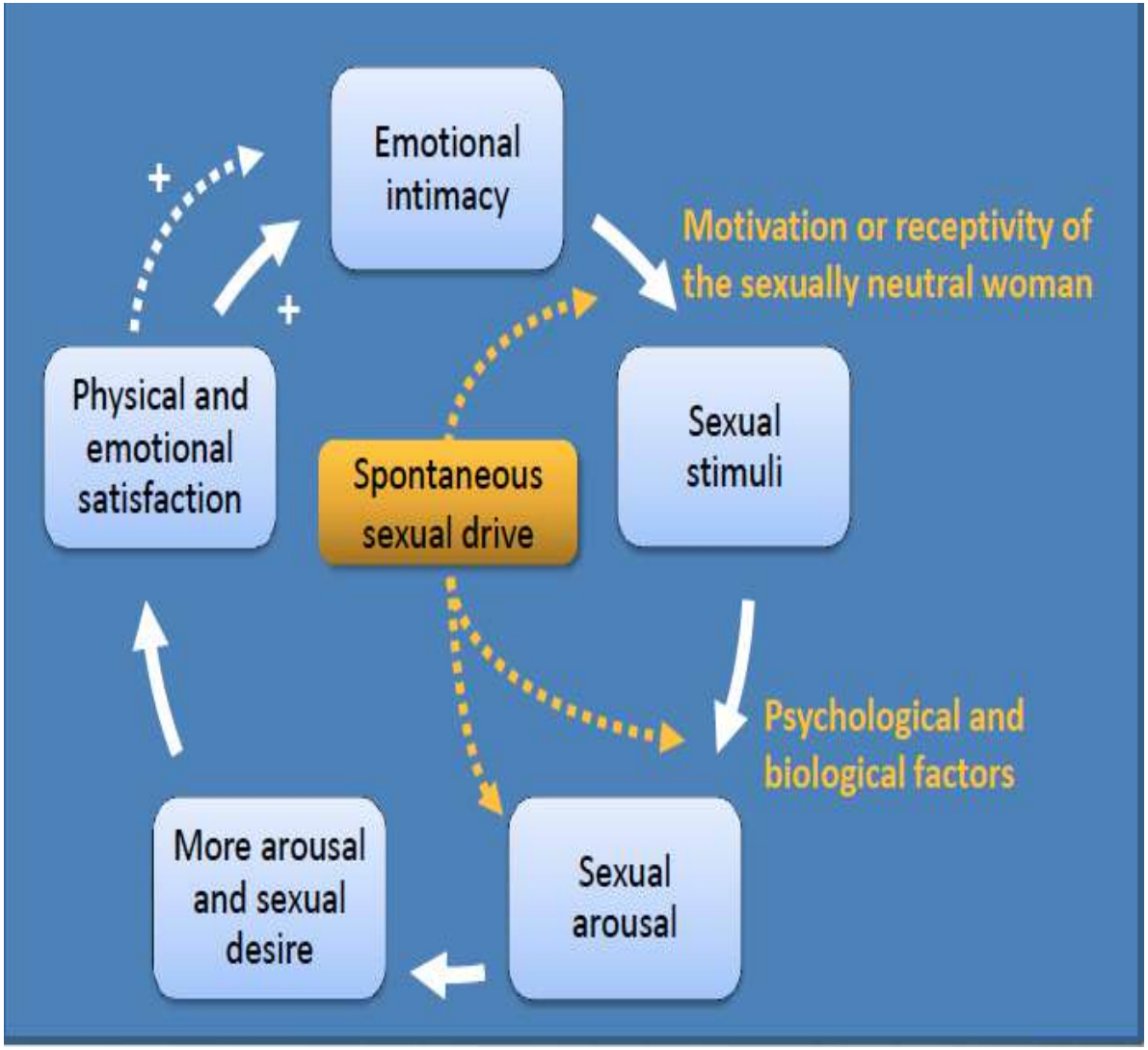
(*b*) Female



Criticism to the model

- It assumes that men and women respond exactly the same, all four steps, every time
- It ignore non-biologic experiences such as desire, emotion, pleasure and satisfaction
- It is limited to genital response
- Does not place sexuality within context (i.e. relationship, setting)
- Based on cultural idea that sex is genital and orgasm the ultimate goal (overemphasis on intercourse and orgasm)

Basson's Model of Female Sexual Response



Models endorsed by women and men

- Most MEN endorse the linear models
- Equal numbers of WOMEN endorse the M&J, Kaplan and Basson models
- App. 75% of WOMEN with sexual problems endorsed the Basson or none of the models

MALE SEXUAL DYSFUNCTION

- Sexual Desire Disorders:
  - Hypoactive Sexual Desire Disorder
  - Sexual Aversion Disorders
- Erectile Disorders:
  - Erectile Dysfunction
  - Prolonged Erection
- Ejaculatory Disorders:
  - Rapid Ejaculation
  - Retarded Ejaculation
- Orgasm Disorders:
  - Anorgasm

Erectile Dysfunction

- Erectile dysfunction (ED) is characterized by the consistent inability to attain or maintain an erection sufficient for satisfactory sexual intercourse[1]
- ED affects ~50% of men between 40 and 70 years of age, with prevalence increasing with age[2]
- ED often[3-5]:
  - Reduces motivation for sexual activity
  - Creates a conscious focus on ED by the affected man
  - Inhibits partner initiation of sexual activity

1. NIH Consensus Conference. *JAMA* 1993;270(1):83-90.
2. Feldman H et al. *J Urol* 1994;151:54-61.
3. Perelman M et al. *J Sex Med* 2005;2:397-406.
4. Fisher W et al. *J Sex Med* 2005;2:675-84.
5. Cameron A et al. *J Sex Marital Ther* 2005;31:229-42.

Prevalence of Erectile Dysfunction

- The reluctance of many men to admit to suffering from erection problems causes difficulties in determining its prevalence
- Worldwide prevalence of ED is between 10% and 20%, and it is strongly correlated with aging
  - Among younger men, 8% of 20- to 29-year-olds and 11% of men ages 30-39 experience ED
  - Approximately 52% of men ages 40-70 experience ED
  - More than 77% of men over 75 experience ED
- This may be due to:
  - Increased incidence of diseases that cause ED
  - Use of treatments that can cause ED
- Estimated prevalence for 2025 = 300M men worldwide

Laumann EO, A Nicolosi, DB Glasser, et al. Sexual problems among women and men aged 40–80 y: prevalence and correlates identified in the global study of sexual attitudes and behaviors. *Int J Impot Res*. 2005;17:39–57; Nicolosi A, Laumann EO, Glasser DB, et al. Sexual behavior and sexual dysfunctions after age 40: the global study of sexual attitudes and behaviors. *Urology*. 2004;64:991–997; Saigal CS, Wessells H, Pace J, et al. Predictors and prevalence of erectile dysfunction in a racially diverse population. *Arch Intern Med*. 2006;166:207-212; Lue TF. Erectile dysfunction. *N Engl J Med*. 2000;342:1802–1813; Rosen RC, Fisher WA, Eardley I, et al. The multinational men's attitudes to life events and sexuality(MALES) study: I. Prevalence of erectile dysfunction and related health concerns in the general population. *Cur Med Res Opin*. 2004;20(5):607–617; Feldman HA, Goldstein I, Hatzichristou DG, et al. Impotence and its medical and psychosocial correlates: results of the Massachusetts male aging study. *J Urol*. 1994;151(1):54-61; Porst H, Buvat J. *Standard Practice in Sexual Medicine*. 2006; Uckert S, Mayer ME, Stief CG et al. The future of the oral pharmacotherapy of male erectile dysfunction: things to come. *Expert Opin Emerg Drugs*. 2007;12(2):219-228.

Causes of ED

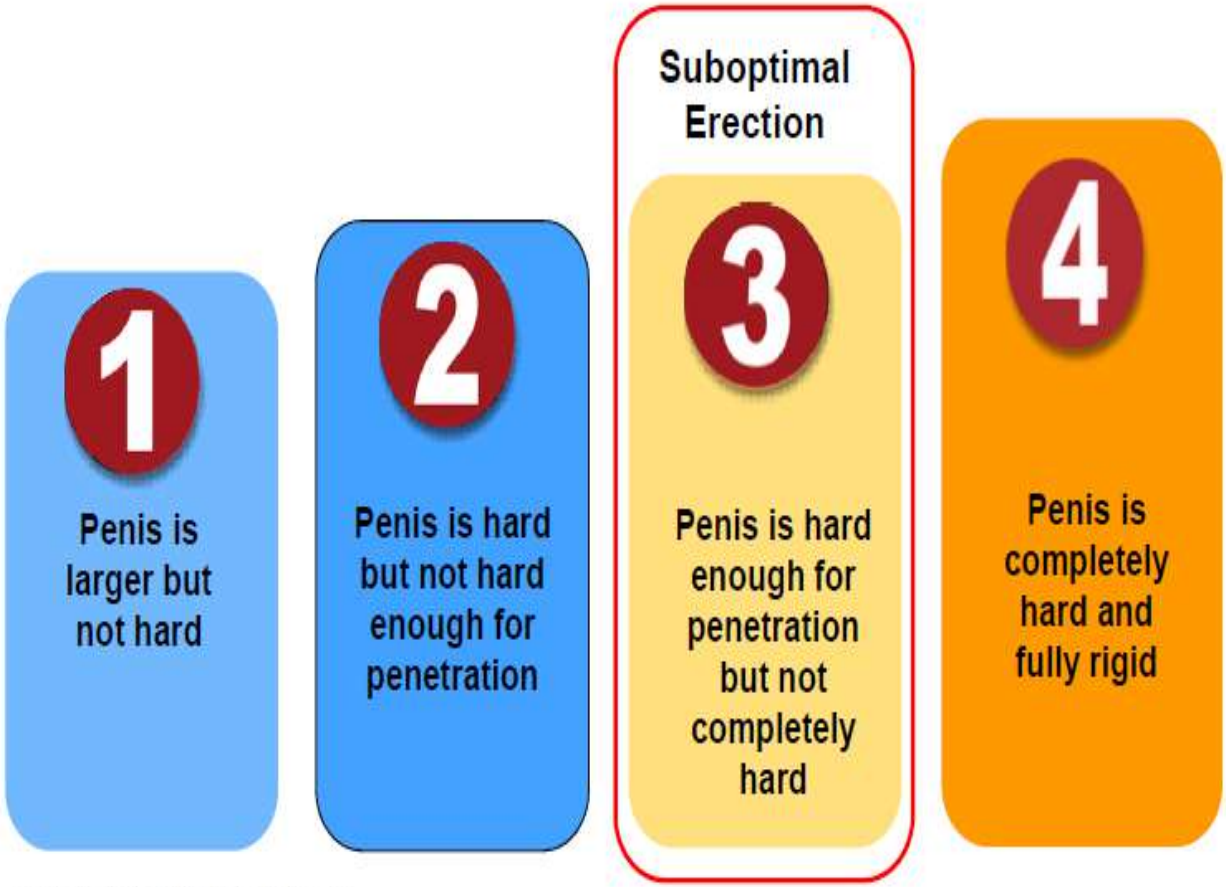
- Penile erection requires:
  - **Neural transmission** of pro-erectile impulses
  - **Intact** arterial blood flow supply
  - **Functional** erectile tissue in the corpus cavernosum

Anything that impairs any of these three processes will have an impact on erectile function

- A normal erection relies on a combination of psychogenic, hormonal, neurological, and vascular factors
- These are broadly divided into psychogenic causes and organic causes
- ED is generally multifactorial

Albersen M, Mwamukonda, KB, Shindel AW, et al. Evaluation and treatment of erectile dysfunction. *Med Clin N Am.* 2011;95:201–212; Foresta C, Caretta N, Corona G, et al. Clinical and metabolic evaluation of subjects with erectile dysfunction: a review with a proposal flowchart. *Int J Androl.* 2008;32:198-211; Lue TF. Erectile dysfunction. *N Engl J Med.* 2000;342:1802–1813; Bortolotti A, Parazzini F, Colli E, et al. The epidemiology of erectile dysfunction and its risk factors. *Int J Androl.* 1997;20:323–334.

Diagnosis of ED- The Erection Hardness Scale (EHS)



Goldstein I et al. N Engl J Med 1998; 338: 1397–1404

Mild ED Is Not a Minor Disease

Comorbidities, % (n)*	Sildenafil Mild ED Trial (n=176)	Sildenafil Database (n=14,537)
Cardiovascular		
Diabetes mellitus	13.6 (24)	22.1 (3207)
Dyslipidemia	5.1 (9)	0.4 (52)
Hypercholesterolemia	12.5 (22)	9.5 (1375)
Hyperlipidemia	7.4 (13)	11.3 (1647)
Hypertension	26.1 (46)	32.8 (4775)
Other comorbidities		
Anxiety	4.0 (7)	1.6 (227)
Benign prostatic hyperplasia	9.7 (17)	9.9 (1436)
Depression	6.3 (11)	5.6 (811)
Gastroesophageal reflux disease	10.8 (19)	6.0 (879)

*Cases counted as diabetes mellitus from the mild ED trial were those categorized as “diabetes mellitus” and as “type 2 diabetes mellitus” (no other diabetes categories existed). Cases tallied as “diabetes mellitus” from the database were those categorized as “diabetes mellitus” and as “diabetes mellitus non-insulin-dependent”, “diabetes mellitus insulin-dependent”, “insulin-resistant diabetes”, or “insulin-requiring type 2 diabetes mellitus”

ED, erectile dysfunction

Adapted from Lee JC, et al. BJU Int, 2011;107:956-60

Mild ED Is an Important Indicator of Risk

- Men with mild ED have similar risk factors to a general ED clinical trial population
- Mild ED is an important indicator of risk for underlying disease associated with ED
- Inquiry into ED should be part of routine clinical evaluation to facilitate rapid identification and early intervention
- Men complaining of mild ED should be evaluated adequately for underlying cardiovascular risk

ED, erectile dysfunction

Lee JC, et al. BJU Int, 2011;107:956-60

ED and cardiovascular disease share common risk factors

1. Increasing age
2. Male
3. Hypertension
4. Diabetes mellitus
5. Obesity
6. Cigarette smoking
7. Dyslipidemia
8. Sedentary lifestyle

ED and CVD often co-exist

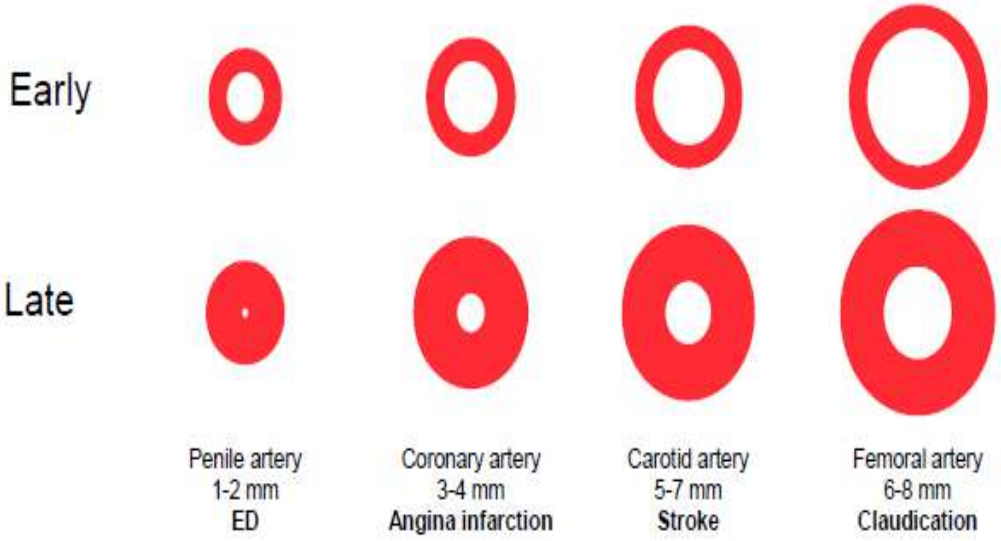
DeBusk R et al. Am J Cardiol 2000 Jul 15;86(2):175–181.

ED often occurs before other vascular diseases

The artery size theory

- ED manifests earlier than cardiovascular disease because the smaller penile arteries reach critical narrowing, with insufficient blood flow, earlier than larger vessels

  (Threshold for symptom development is 50% lumen.)



Montorsi P, Ravagnani PM, Galli S, et al. The artery size hypothesis: a macrovascular link between erectile dysfunction and coronary artery disease. *Am J Cardiol*. 2005;96(suppl):19M–23M.

Erectile Dysfunction – Today's concept

Artery Event	Size (mm)	Clinical
Penile	1 – 2	Erectile Dysfunction
Coronary	3 – 4	Coronary Artery Disease
Carotid	5 – 7	TIA / Stroke
Femoral	6 - 8	Claudication

Penis is the barometer of Endothelial Health

↓

Erectile Dysfunction is a mirror of Cardiovascular Risk

Erectile dysfunction = Endothelial dysfunction

Lifestyle risk factors for ED

- Lifestyle factors have been associated with ED in both cross-sectional and longitudinal studies
  - Obesity and sedentary lifestyle are clear-cut risk factors for ED
- Smoking and alcohol consumption have also been implicated in some studies to date
- Higher levels of sedentary behaviour have been strongly linked to the occurrence of ED in aging men
- Intervening on cardiovascular and lifestyle factors may have broader benefits beyond restoration of erectile function

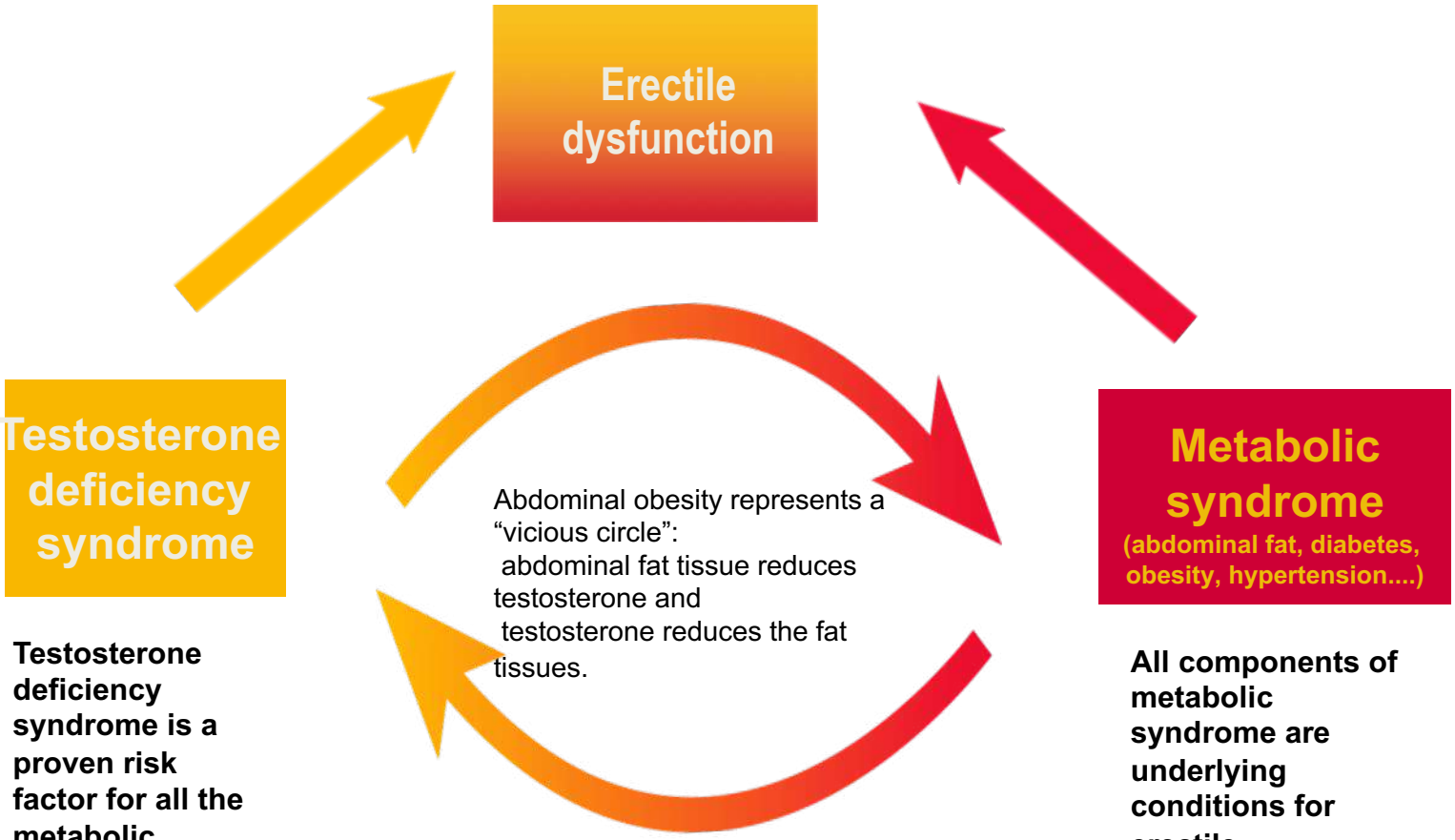
Jackson G, Rosen RC, Kloner RA, et al. The Second Princeton Consensus on sexual dysfunction and cardiac risk: new guidelines for sexual medicine. *J Sex Med*. 2006;3:28-36
Mirone V, Ricci E, Gentile V, Basile Fasolo C, Parazzini F. Determinants of erectile dysfunction risk in a large series of Italian men attending andrology clinics. Eur Urol. 2004;45:87–91.

Process of Care Model

Process	Action
Education	• Patient and partner education
Modify reversible causes	• Alter or discontinue medication • Hormonal replacement • Corrective surgery • Lifestyle modifications
First-line therapy	• Oral agents • Vacuum devices • Psychosexual/couples therapy
Second-line therapy	• Intracavernosal injections • Intraurethral alprostadil
Third-line therapy	• Penile implants

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

THE LINK BETWEEN ERECTILE DYSFUNCTION, TESTOSTERONE AND METABOLIC SYNDROME



Testosterone deficiency syndrome is a proven risk factor for all the metabolic syndrome components

All components of metabolic syndrome are underlying conditions for erectile dysfunction

The Metabolic Syndrome - A New World Wide Definition: IDF Consensus Group, Berlin 2005

- Central obesity: waist circumference in Europids ≥ 94 cm

  Asians: > 90 cm

PLUS any 2 of the following:

- raised triglycerides: ≥ 1.7 mmol/L (≥ 150 mg/dL)
- reduced HDL cholesterol < 1.03 mmol/L (< 40 mg/dL)
- raised blood pressure: systolic ≥ 130 mm Hg
  diastolic ≥ 85 mm Hg (or treatment)
- raised fasting plasma glucose: ≥ 5.6 mmol/L (≥ 100 mg/dL)
  (or type 2 diabetes)

http://www.idf.org/webdata/docs/MetSyndrome_FINAL.pdf

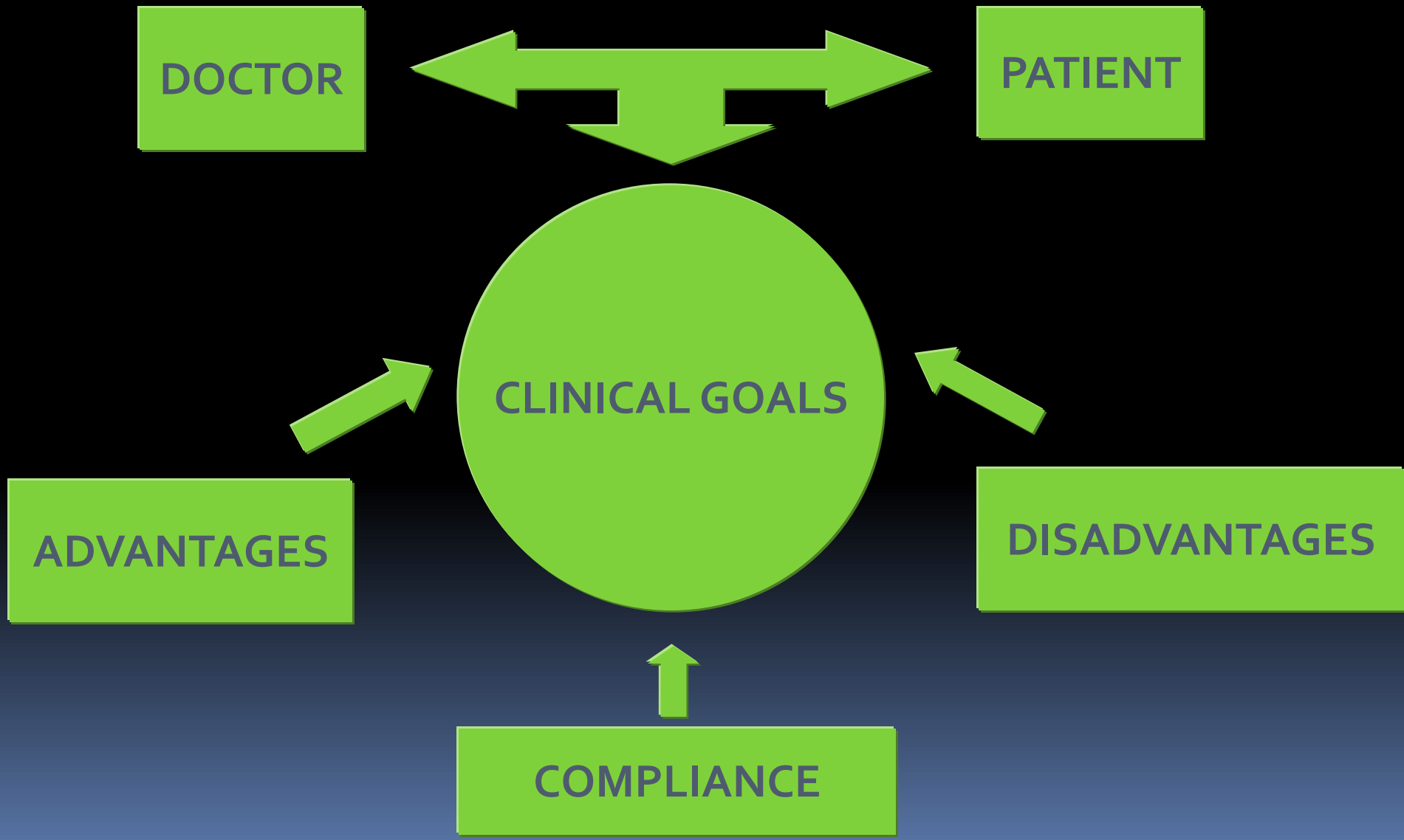
ANDROPAUSE TEST

1. Apakah libido atau dorongan seksual anda menurun akhir-akhir ini ?
2. Apakah anda merasa lemas, kurang tenaga ?
3. Apakah daya tahan dan kekuatan fisik anda menurun
4. Apakah tinggi badan anda berkurang ?
5. Apakah anda merasa kenikmatan hidup menurun ?
6. Apakah anda merasa kesal atau cepat marah ?
7. Apakah ereksi anda kurang kuat ?
8. Apakah anda merasakan penurunan kemampuan dlm berolah raga ?
9. Apakah anda sering mengantuk dan tertidur sesudah makan malam ?
10. Apakah anda merasakan adanya perubahan atau penurunan prestasi kerja ?

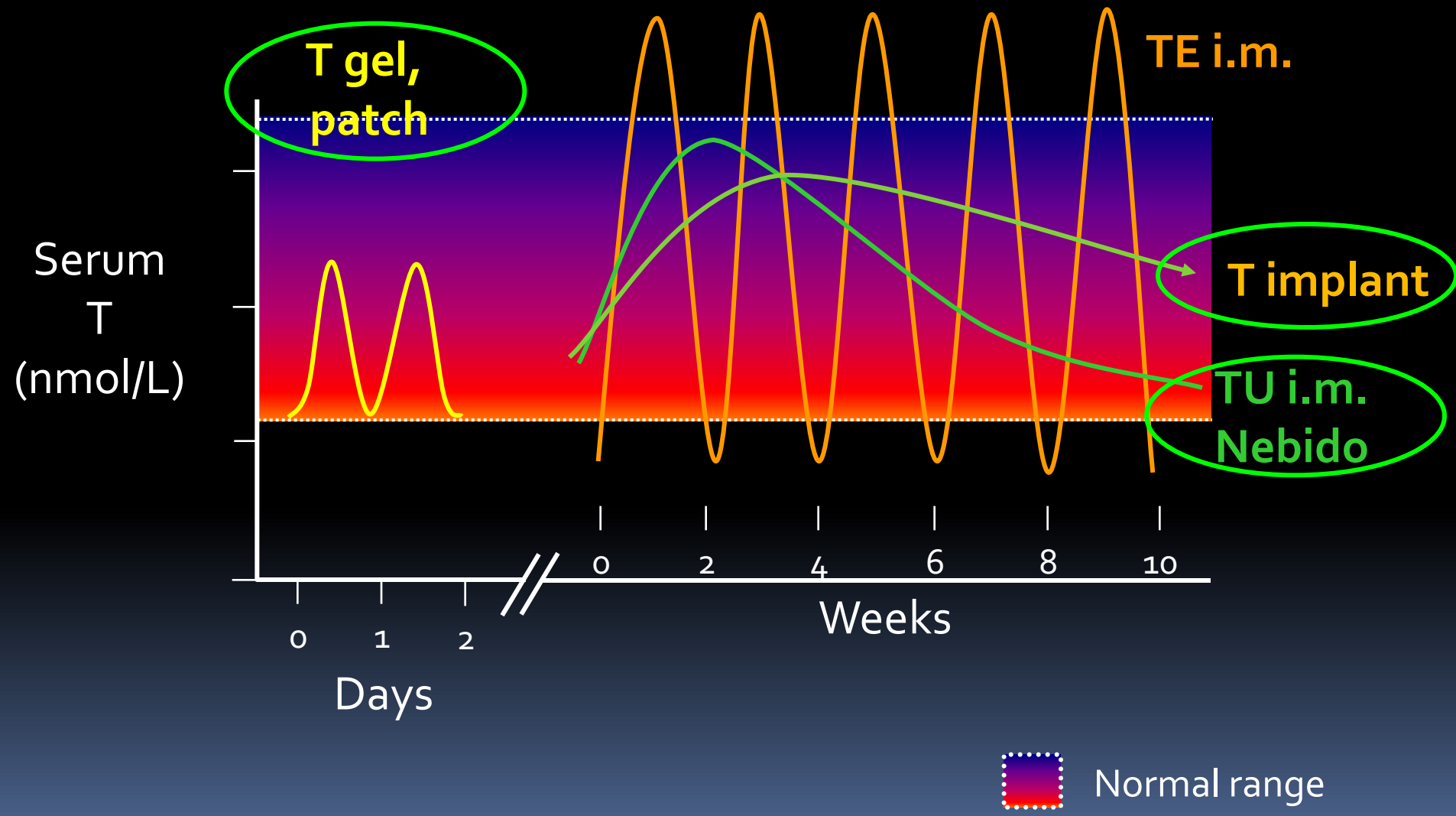
Jika jawaban no. 1 dan 7 adalah "ya"
atau ada 3 jawaban "ya" selain nomor tsb →
kemungkinan besar kadar testeron Anda menurun atau mengalami Andropause

TESTOSTERONE REPLACEMENT THERAPY

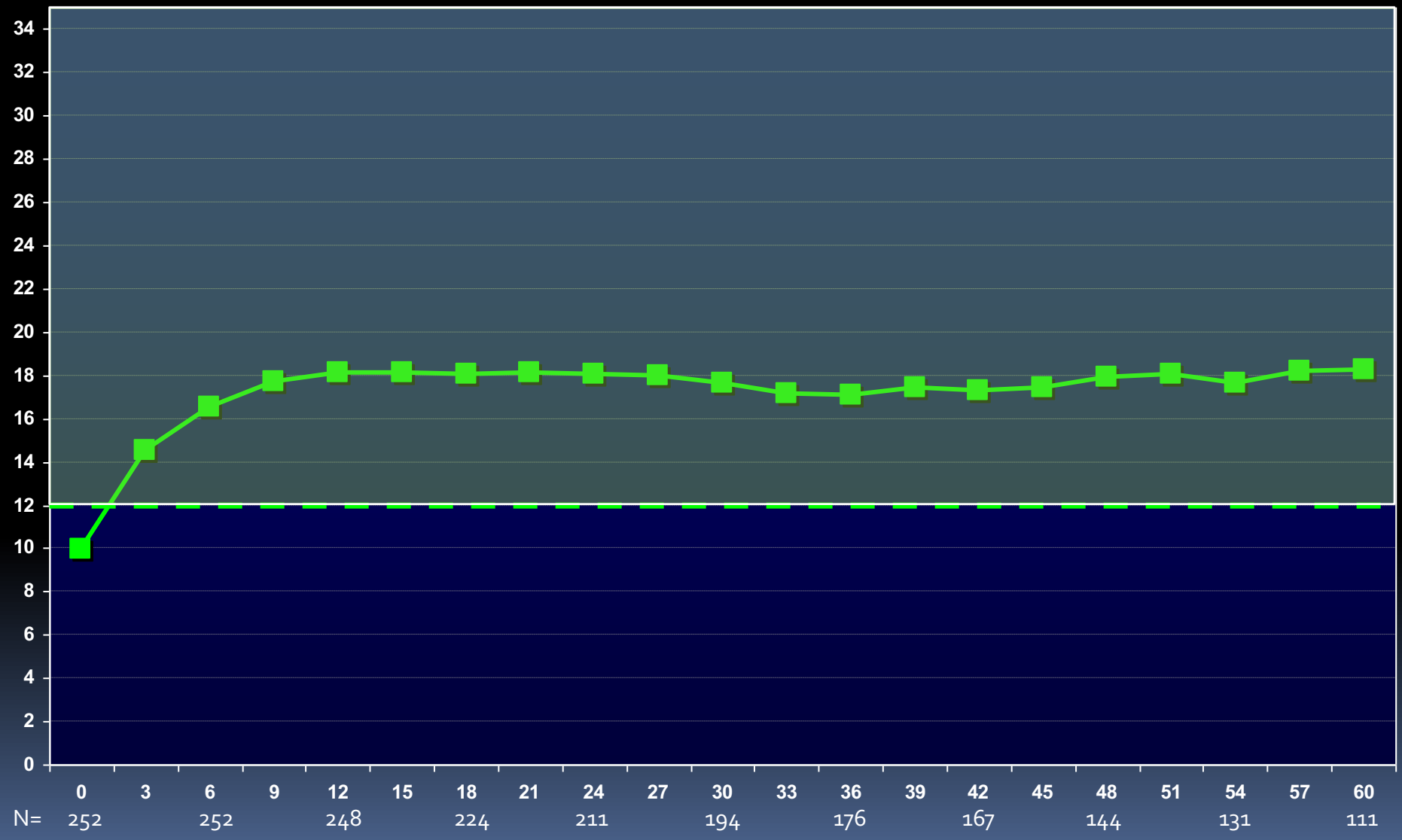
HOW TO CHOOSE:



Testosterone Preparations

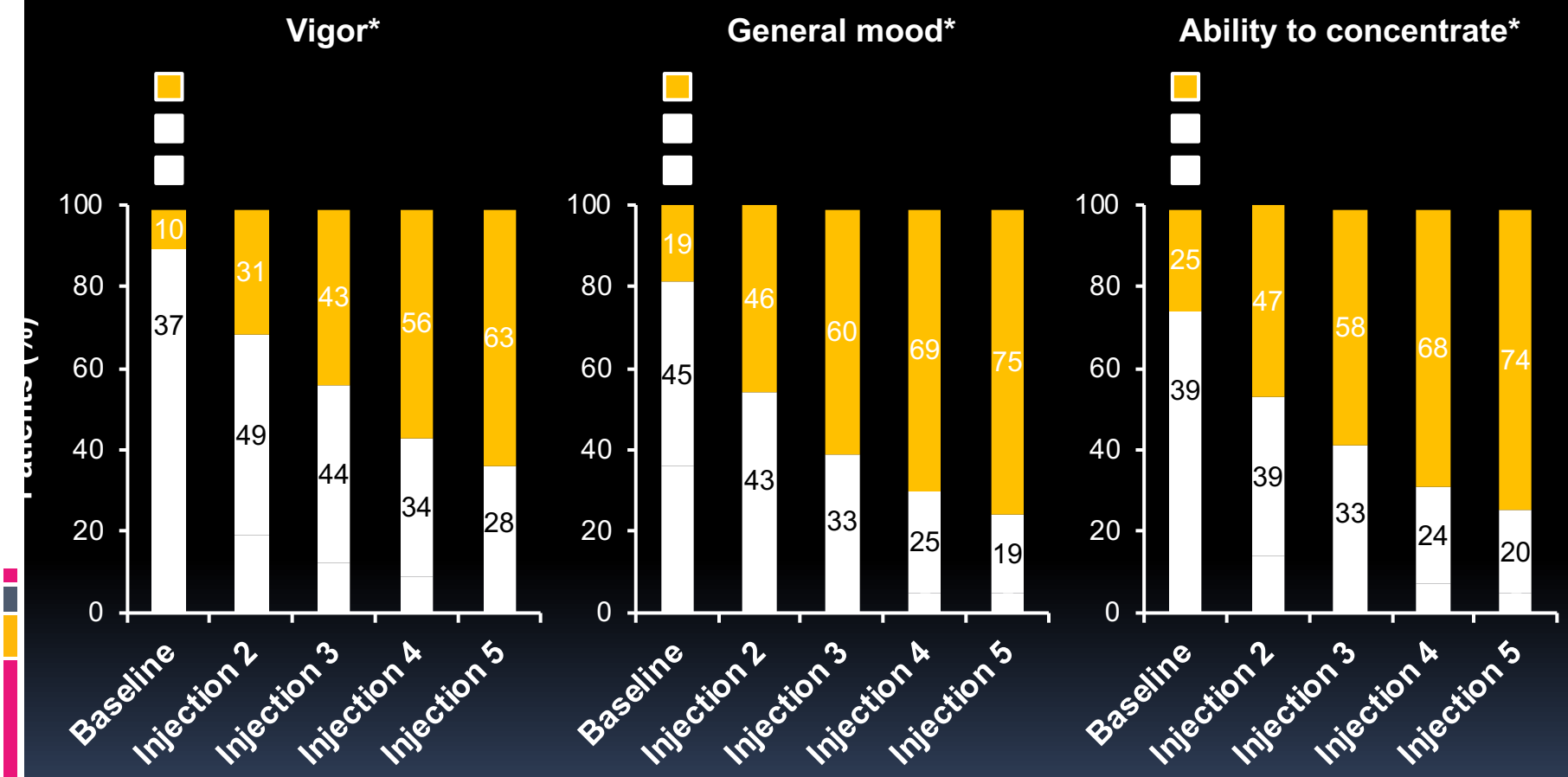


Testosterone Levels (nmol/L) under Treatment with Testosterone Undecanoate Injections (Nebido®) up to 60 mo



Saad F et al. Obes 21(10): 1975-1981 (2013)

IPASS: Nebido® markedly improves mental and psychosexual function in hypogonadal men

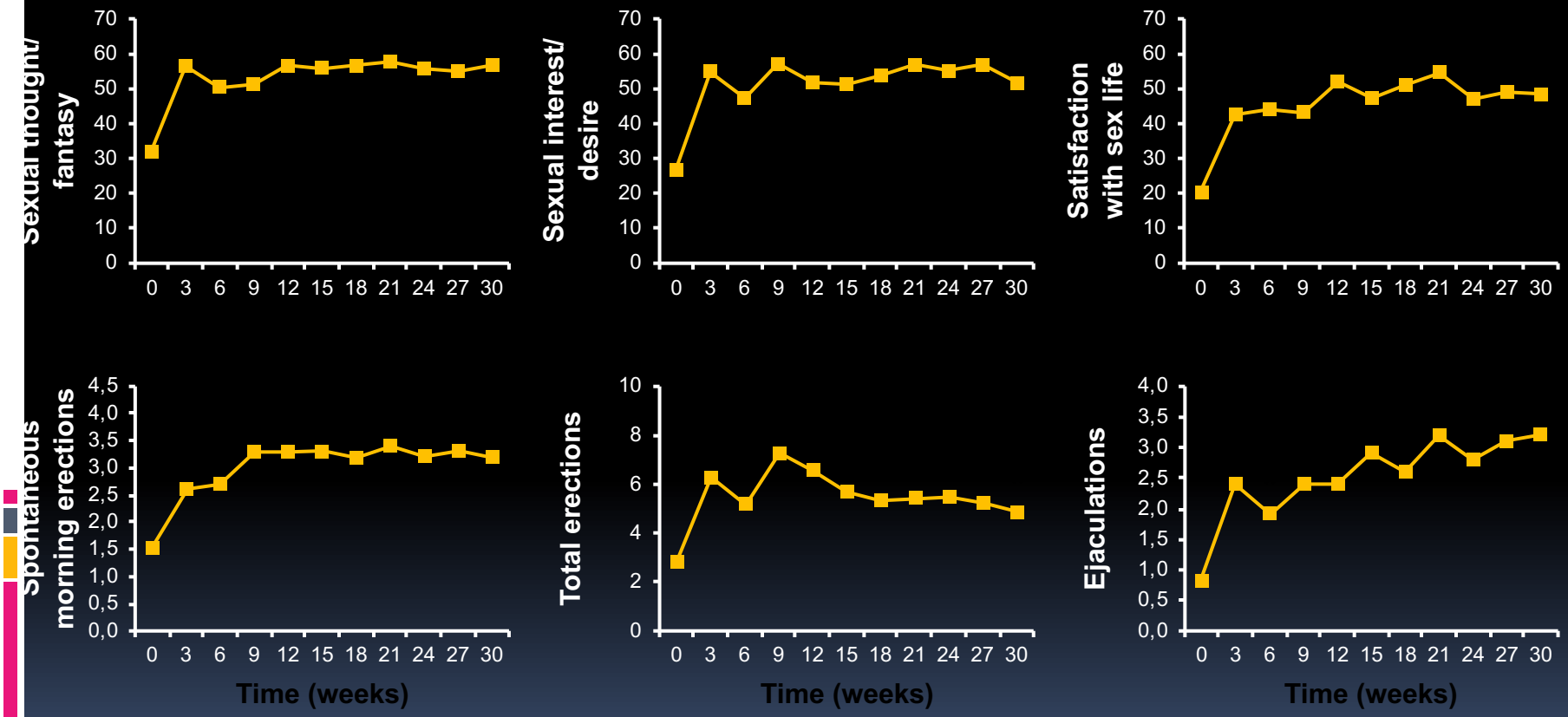


*For all 3 parameters, significant improvements (p<0.0001) were noted over each injection interval

N=1,438 men with confirmed hypogonadism (mean age: 49.2 years); patients' subjective assessment of erectile function, libido, vigor/vitality, mood and ability to concentrate was recorded by physician interview using items and 5-point Likert scales originating from the Aging Males' Symptoms scale (AMS) and simplified International Index of Erectile Function (IIEF-5)

Zitzmann M et al. J Sex Med. 2013;10(2):579–88.

Nebido® significantly improves sexual function in hypogonadal men



*p<0.05 versus baseline

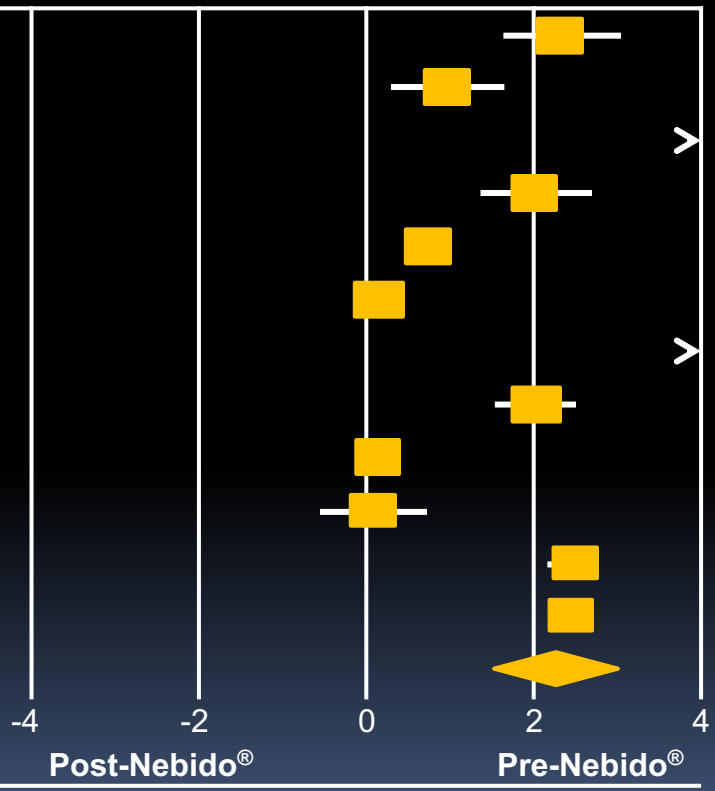
N=20 hypogonadal men (total testosterone: <5 nmol/L) aged 18–65 years, who received Nebido®; patients rated their weekly state concerning different items using a 10-cm visual analog scale

Jockenhövel F et al. Aging Male. 2009;12(4):113–8.

Nebido® significantly improves erectile function in hypogonadal men

Erectile function standardized mean

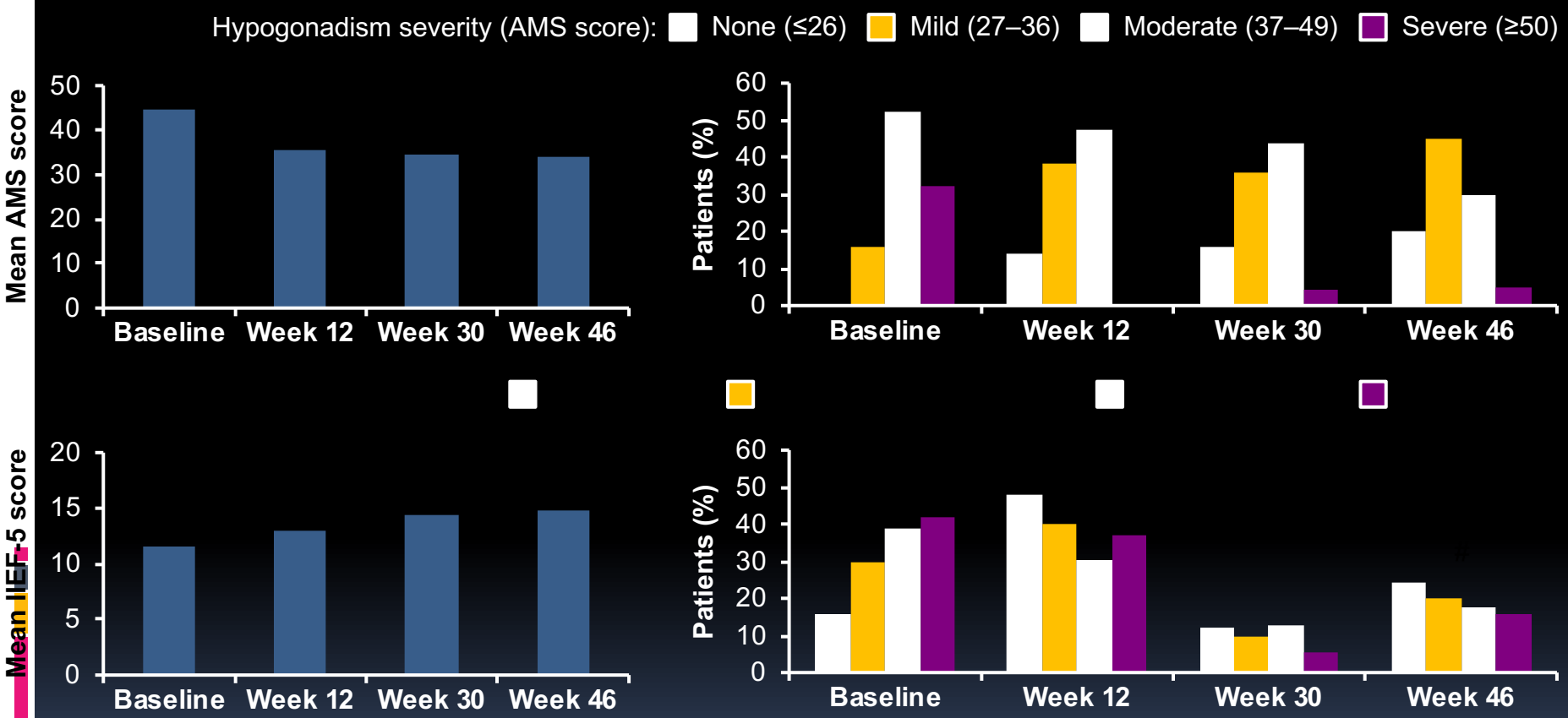
Study	Statistics for each study				Difference in means and 95% CI
	Difference in means	Lower limit	Upper limit	p value	
Saad *et al.* 2007	2.33	1.65	3.01	0.00	
Kalinchenko *et al.* 2008	0.97	0.31	1.62	0.00	
Kurbatov *et al.* 2008	8.67	7.01	10.33	0.00	
Saad *et al.* 2008	2.03	1.37	2.68	0.00	
Moon *et al.* 2010	0.74	0.49	0.99	0.00	
Permpongkosol *et al.* 2010	0.15	-0.07	0.37	0.17	
Garcia *et al.* 2011	8.86	7.17	10.55	0.00	
Arafa *et al.* 2012	2.03	1.57	2.48	0.00	
Zitzmann *et al.* 2013	0.15	0.07	0.22	0.00	
Francomano *et al.* 2014	0.10	-0.52	0.72	0.76	
Haider *et al.* 2014	2.48	2.18	2.77	0.00	
Yassin *et al.* 2014	2.44	2.15	2.73	0.00	
Overall	2.24	1.52	2.97	0.00	



Meta-analysis of 12 studies reporting data for change in erectile function
CI, confidence interval

Corona G et al. Expert Opin Pharmacother. 2014;15(13):1903–26.

Nebido® significantly improves erectile function and response to PDE-5 inhibitors in hypogonadal men with ED



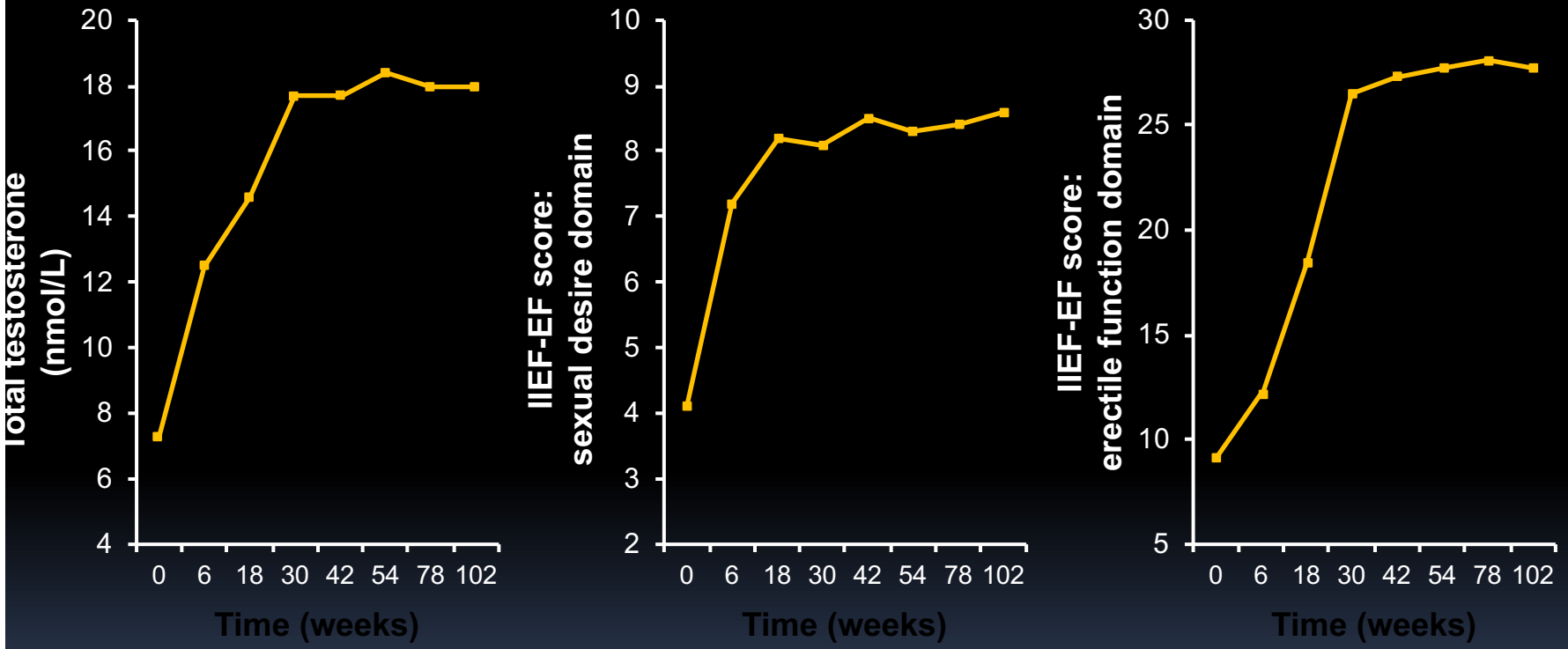
*p≤0.001, **p=0.002, §p=0.003, #p=0.016, ‡p=0.033 versus baseline

N=25 men with symptomatic adult-onset hypogonadism (total testosterone: <10.4 nmol/L; mean age: 60.81 years) with ED receiving Nebido®; at week 12, if ED was not improved (assessed by IIEF-5 score or GAQ), vardenafil was added

AMS, Aging Males' Symptoms scale; ED, erectile dysfunction; GAQ, Global Assessment Question; IIEF-5, simplified International Index of Erectile Function; PDE-5, phosphodiesterase type 5

Permpongkosol S et al. Open J Urol. 2013;3:139–45.

Nebido® improves erectile function in hypogonadal men with ED that does not respond to PDE-5 inhibitors



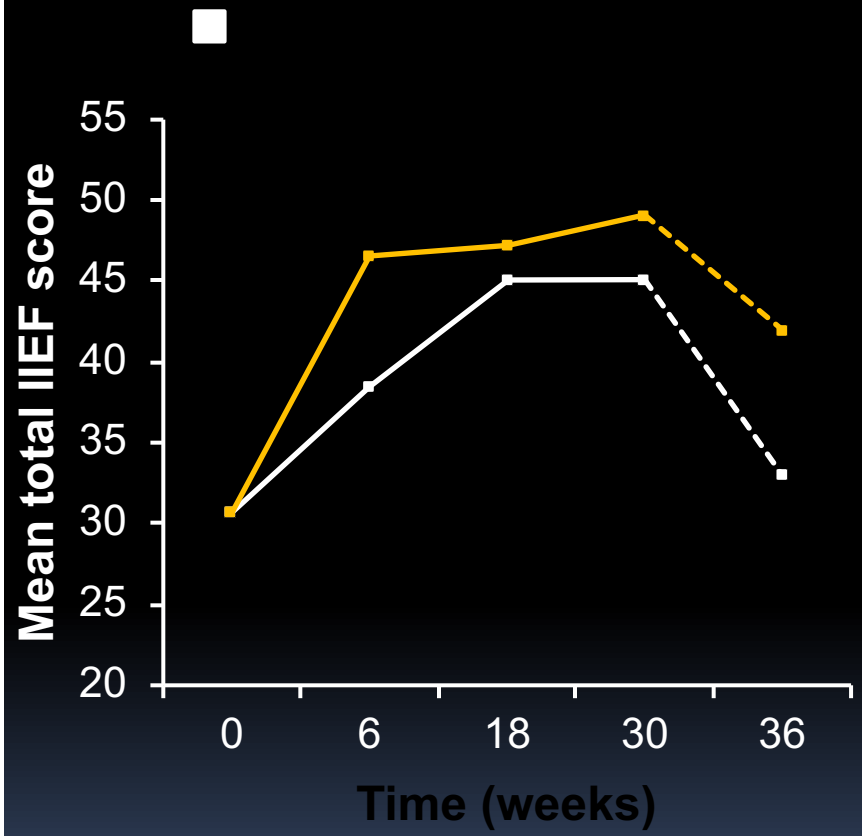
*p<0.05 versus baseline; **p<0.05 versus week 6; §p<0.05 versus week 18

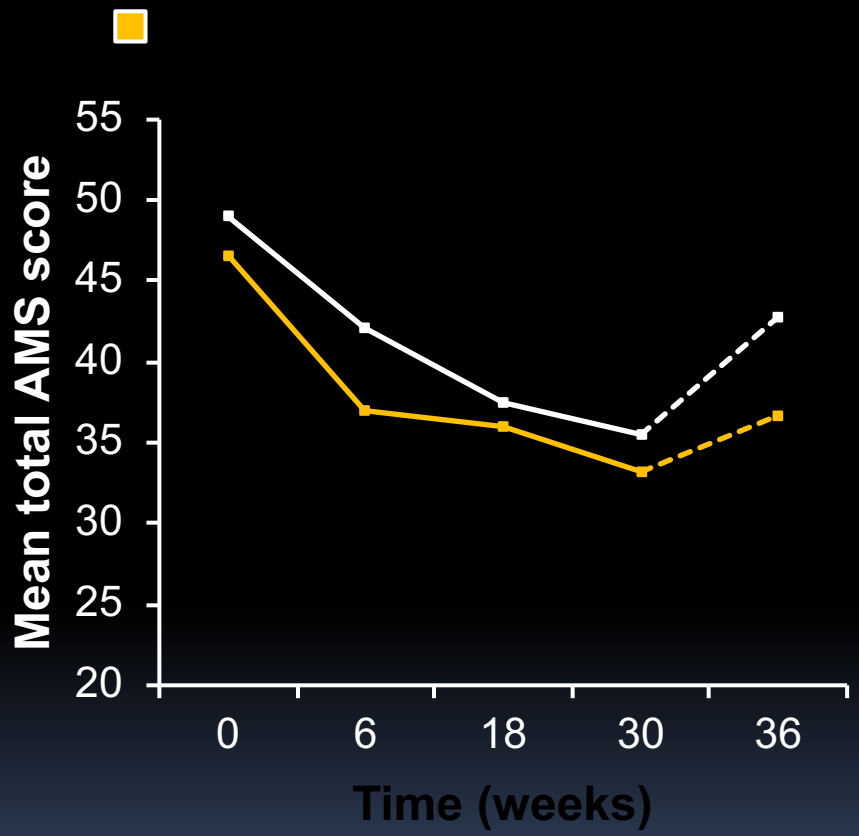
N=29 hypogonadal men [total T: <12 nmol/L (350 ng/dL) or free T: <200 pmol/L (5 ng/dL)] (mean age: 59 years) with ED (mild to moderate: n=21, severe: n=8) that is refractory to PDE-5 inhibitor therapy

ED, erectile dysfunction; IIEF-EF, erectile function domain of the International Index of Erectile Function; PDE-5, phosphodiesterase type 5; T, testosterone

Garcia JA et al. Andrologia. 2011;43(5):293–6.

In hypogonadal men with ED, Nebido® plus daily tadalafil is significantly more effective than Nebido® and on-demand tadalafil





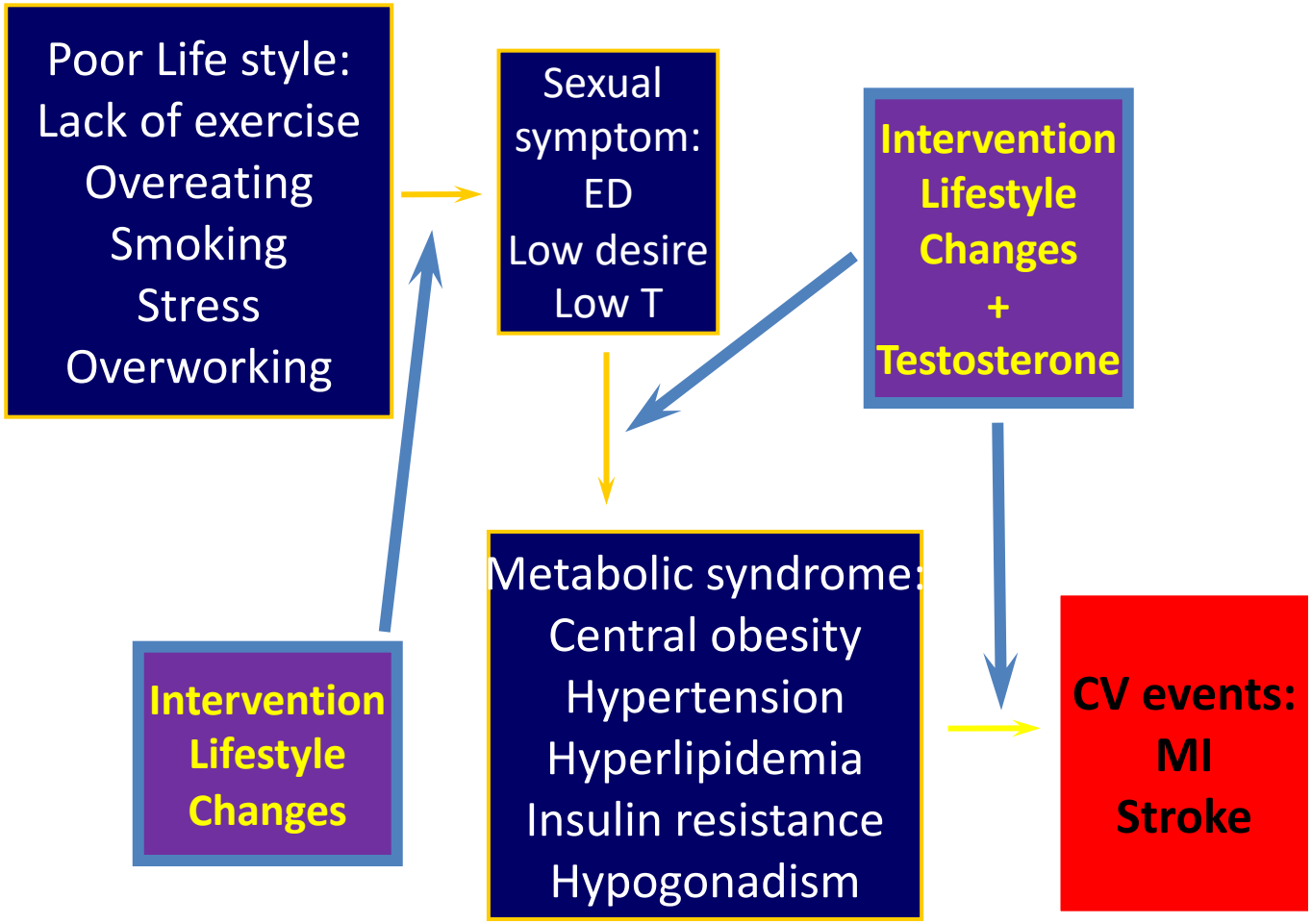
*p<0.05 versus Nebido® plus on-demand tadalafil group

N=60 hypogonadal men [total testosterone: <12 nmol/L (350 ng/dL)] (mean age: 54.25 years) with ED, treated with either Nebido® and on-demand tadalafil (10–20 mg) or combination therapy with Nebido® plus daily tadalafil (5 mg) for 30 weeks

AMS, Aging Males' Symptoms scale; ED, erectile dysfunction; IIEF, International Index of Erectile Function

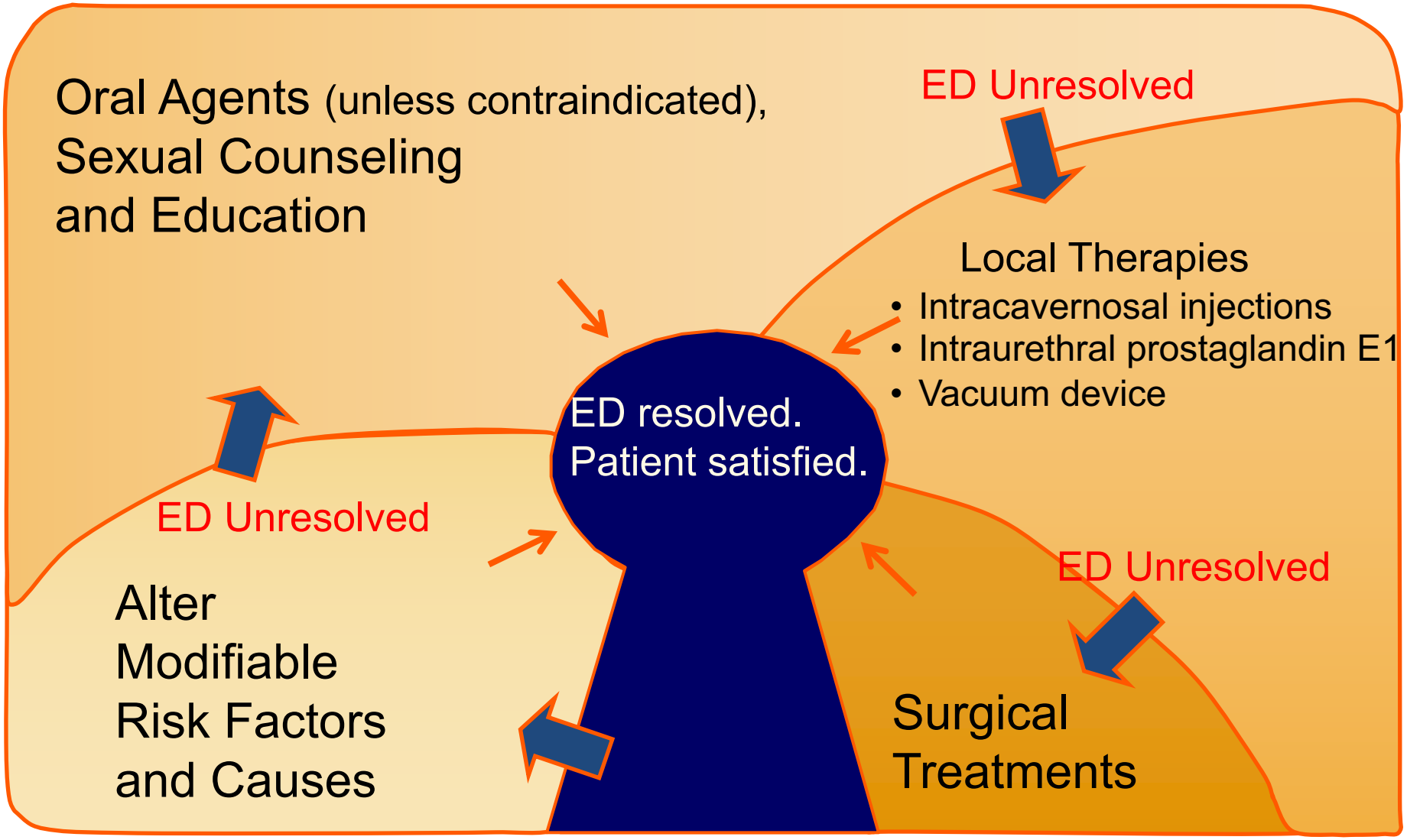
Yassin DJ et al. World J Urol. 2014;32(4):1049–54.

Erectile Dysfunction: an Opportunity for Intervention in the Pathway to Disease



Makhsida N et al. J Urol 174: 827-834 (2005)

Management of ED: World Health Organization Guidelines



Recommendations of the 1st International Consultation on Erectile Dysfunction. In: Jardin A et al., eds. *Erectile Dysfunction*. Plymouth, UK: Health Publication, Ltd; 2000:711-726.

THANK YOU