

Anatomische, physiologische und hormonelle Aspekte von Veränderungender Sexualität von Männern im Alter

Viagra als Lösung aller Probleme ?

„Männliche sexuelle Funktion und Dysfunktion im Verlaufe des Lebens“

Male sexual function is more than erection

SIR—Quality of life has become a very important issue in clinical practice but is often difficult to assess because of the lack of clear criteria. One aspect of wellbeing is sexual function, which is increasingly emphasised in male patients and their partners.^{1,2} However, male sexuality is often reduced to erectile function, described by technical expressions such as tumescence, rigidity, arterial peak flow velocity, and more.³ This simplification is found not only in medical articles, but also in everyday clinical practice.⁴ It leads to misunderstandings when informing patients about side-effects of surgical as well as medical therapy (eg, potency after radical prostatectomy), but also renders various clinical studies incomparable. For example, a patient undergoing retroperitoneal lymphadenectomy for metastases of testicular cancer retains his full sustained erections but may have retrograde ejaculation, and yet would by many be regarded as impotent. Conversely, a patient with erectile dysfunction due to venous leakage may have normal libido and ejaculation. Even patients who do not ejaculate might experience orgasms.

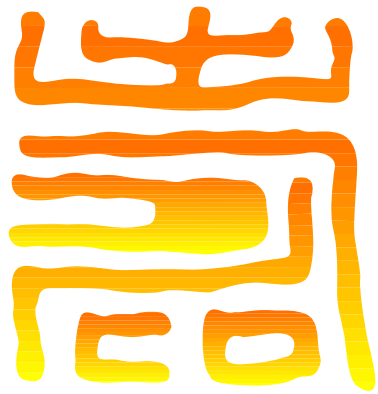
We would therefore point out that normal sexuality is determined by many psychological, social, and organic factors, such as mental wellbeing, partnership, social integration, education, &c, and as such basically depends on the following: libido, erection, ejaculation, and orgasm. Accordingly, we suggest that in medical publications what aspects of sexual function are affected should be clearly stated. The term impotence should no longer be used because it is not well defined.⁵ By the use of these simple specifications much can be learnt about the still poorly understood mechanisms of sexual function. After all, the pleasure of sexual fulfilment is more than a rigid and longlasting erection—it is the result of the smooth and undisturbed interaction of all aspects of sexuality.

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integration, education, &c, and as such basically depends on the following: libido, erection, ejaculation, and orgasm.

Libido



Orgasmus

Männliche Sexualität

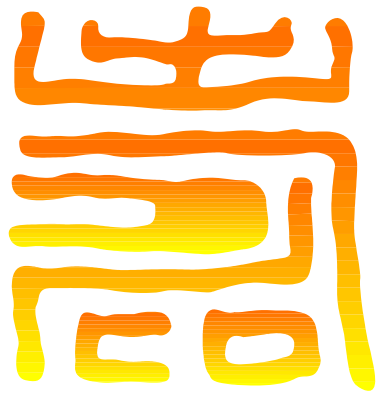


Erektion



Ejakulation

Libido



Orgasmus

Männliche Sexualität

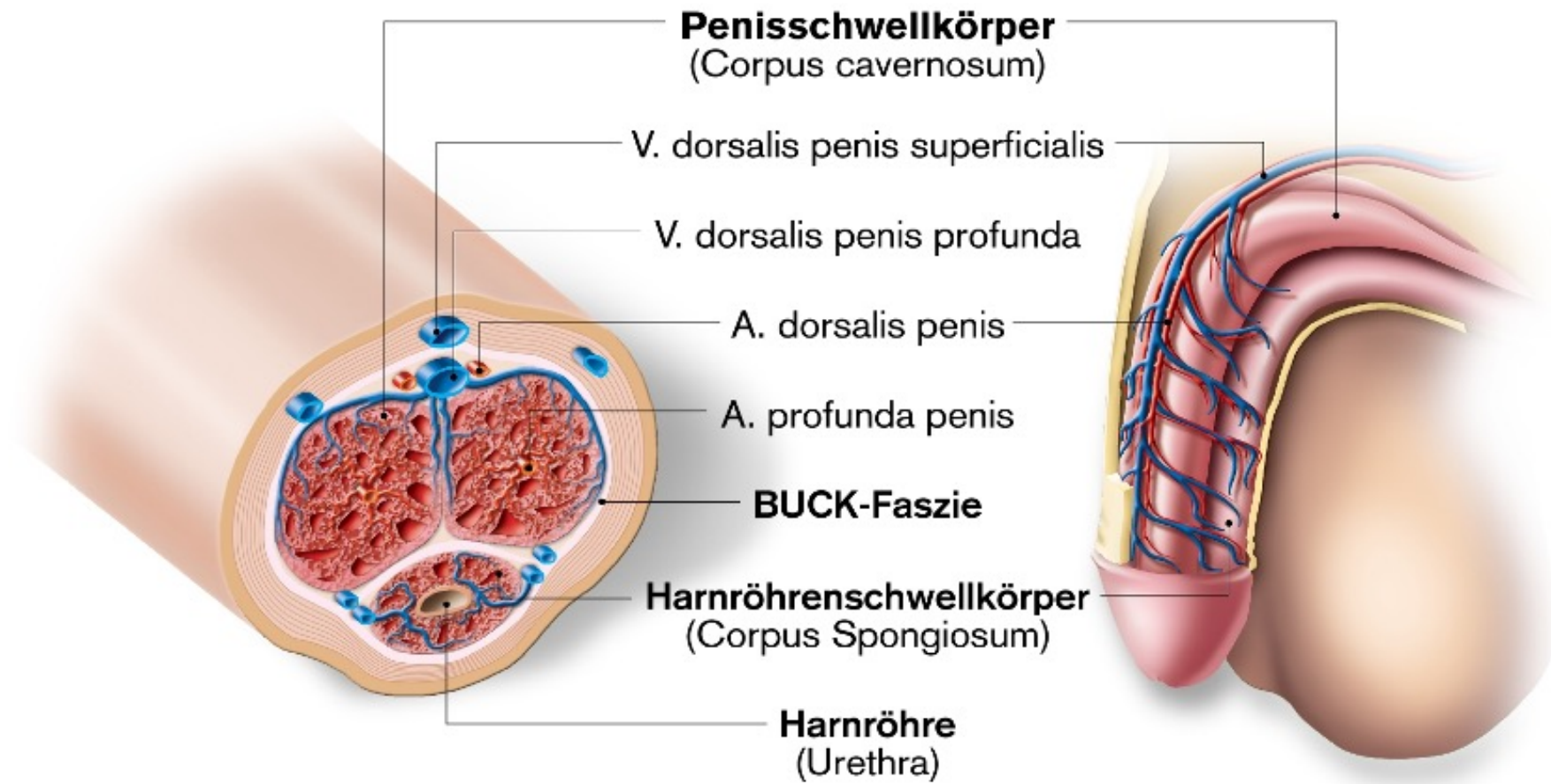


Erektion



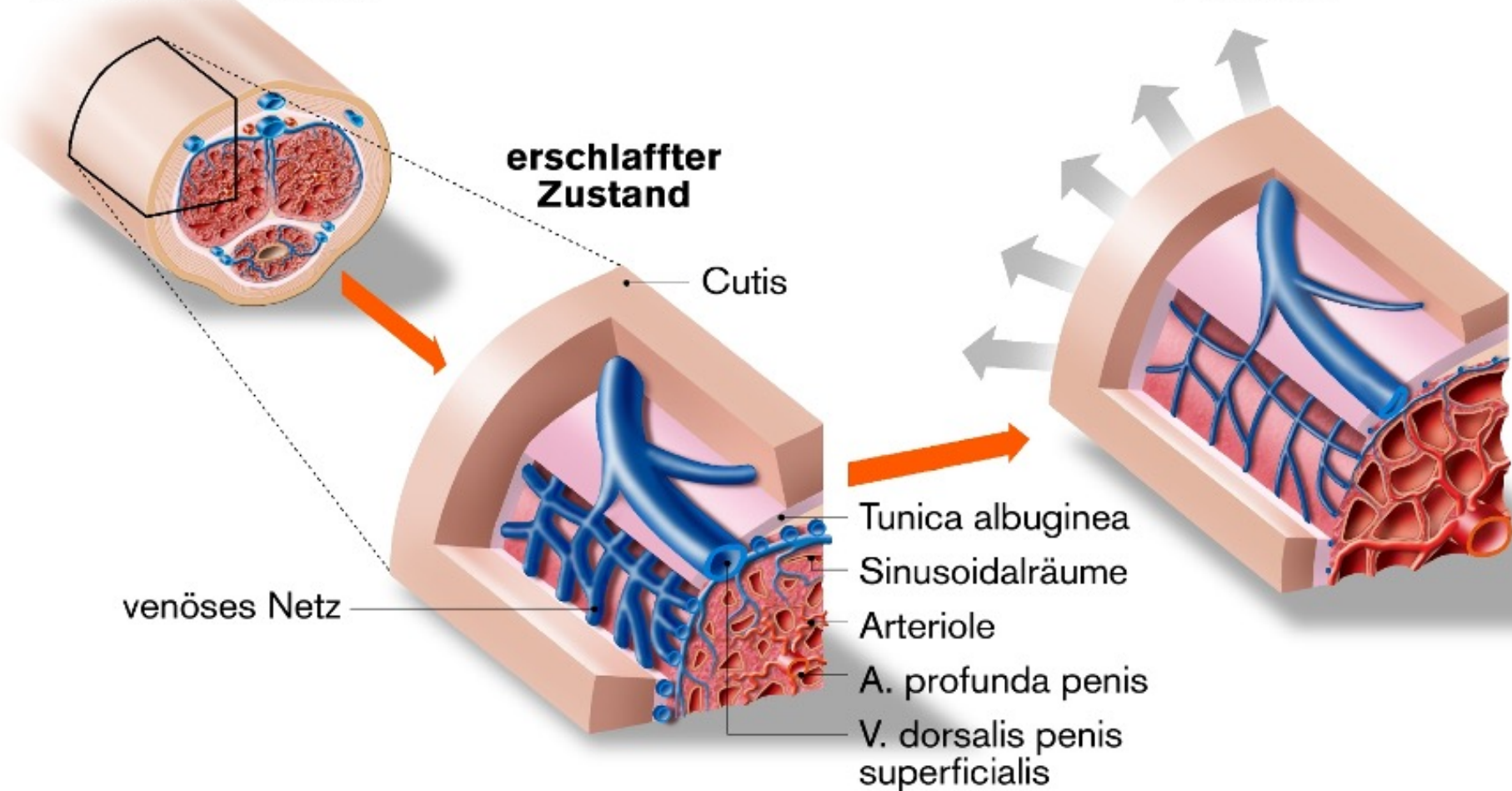
Ejakulation

Anatomie des Penis

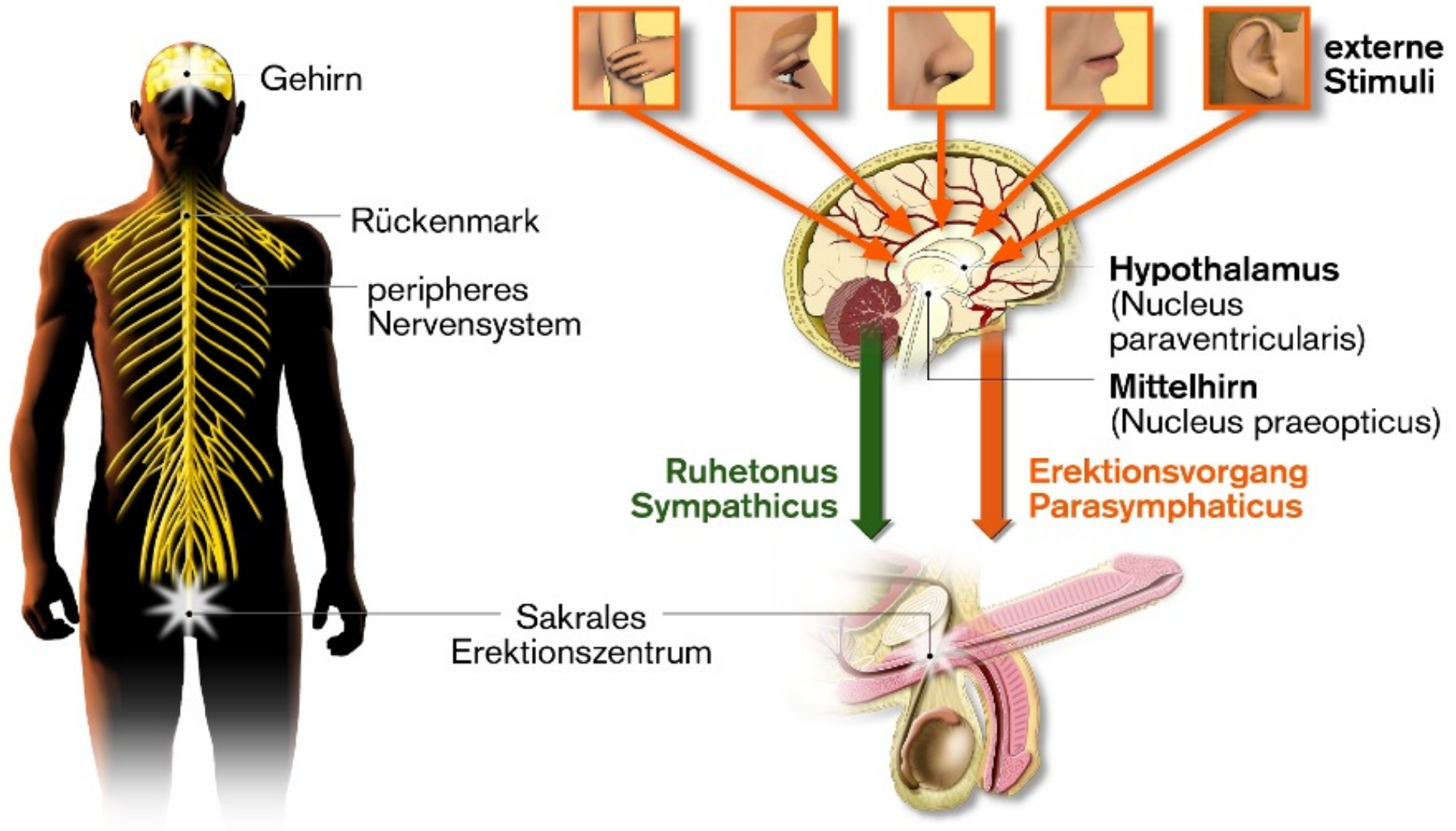


Physiologie der Erektion

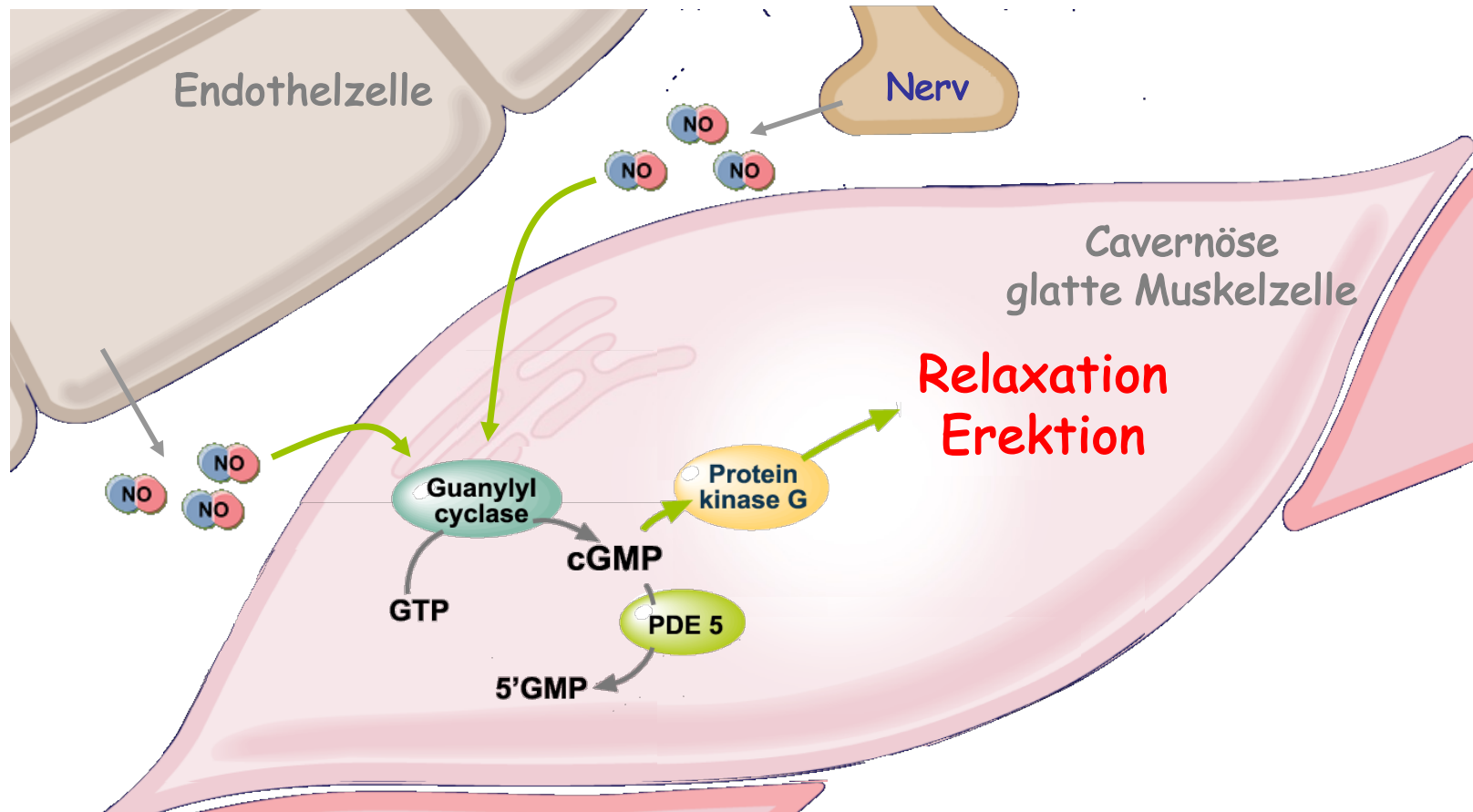
Penisschwellkörper
(Corpus cavernosum)



Die neuronale Steuerung der Erektion

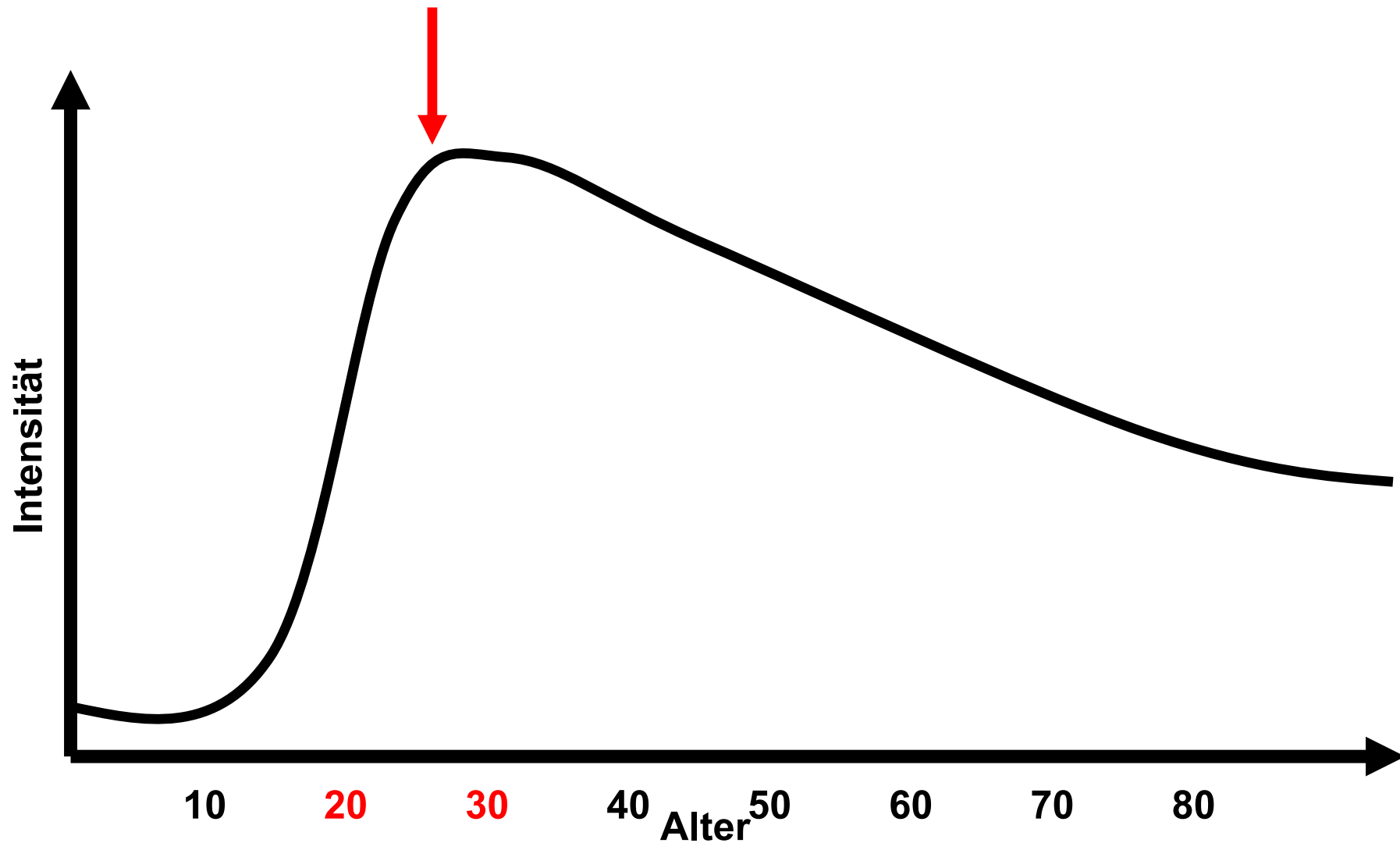


Relaxation der glatten Muskelzellen in den Schwelkörpern

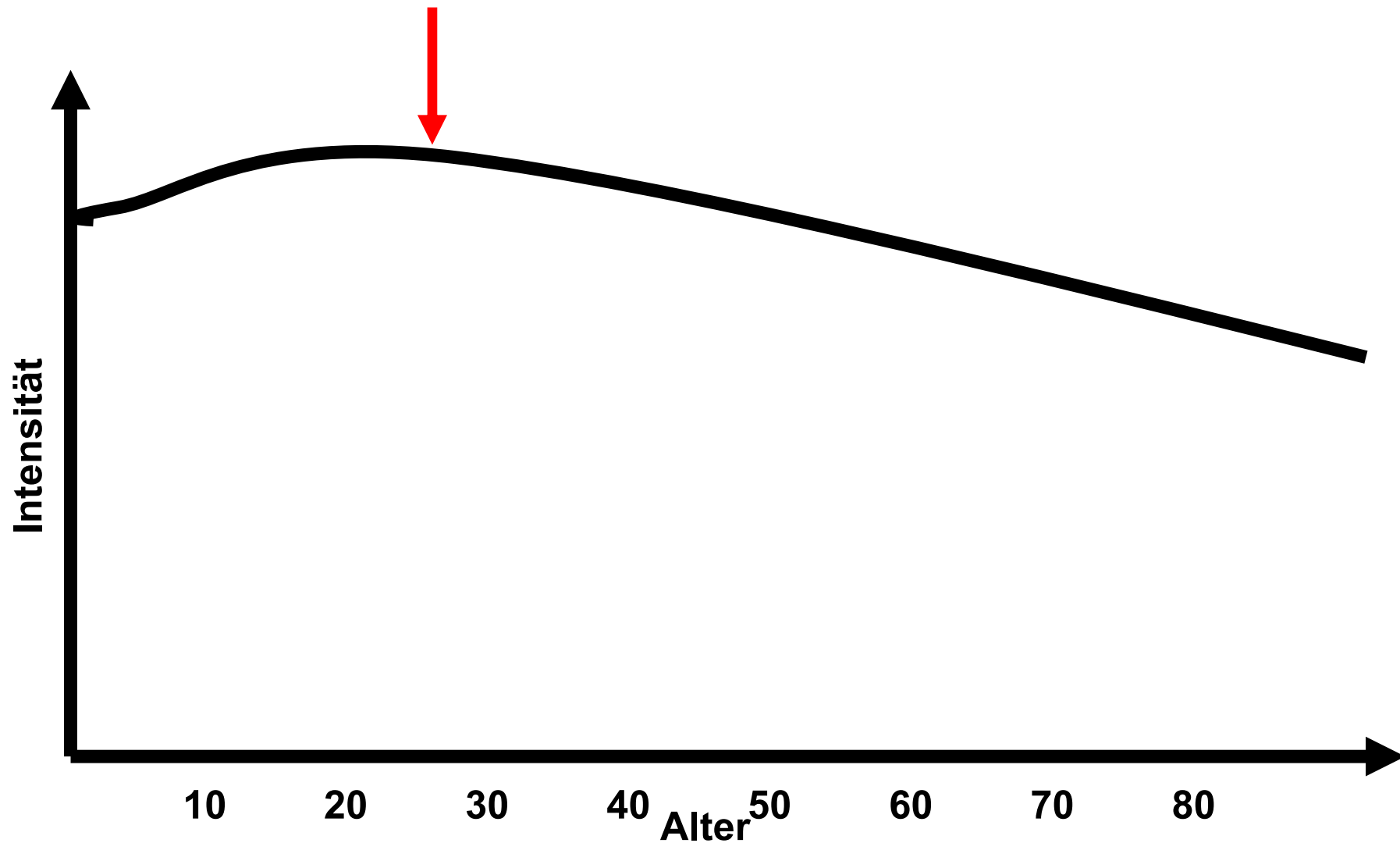


adaptiert nach Sadovsky, Int J Clin Pract, 2001

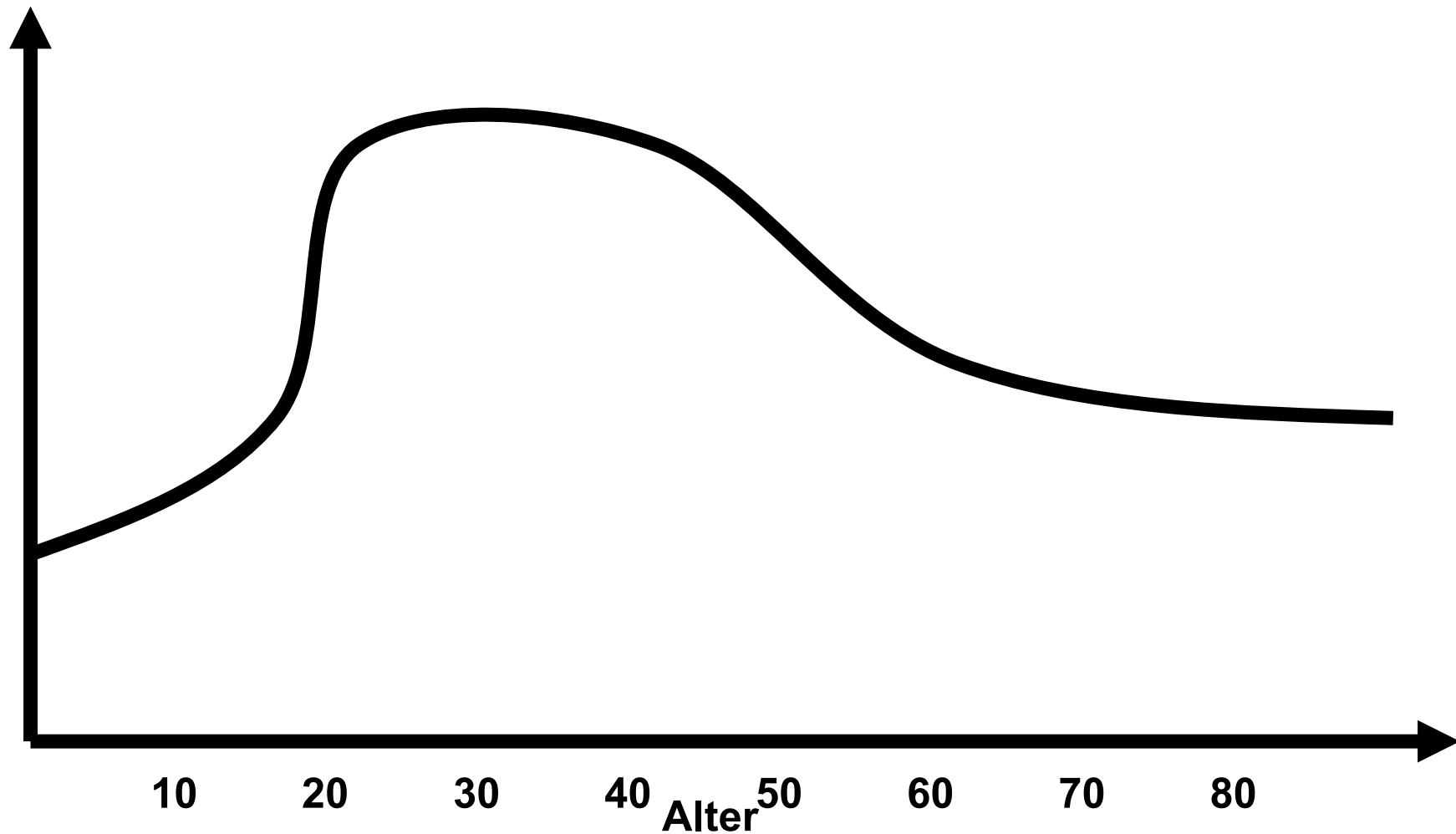
Normale Veränderungen männliche Sexualität



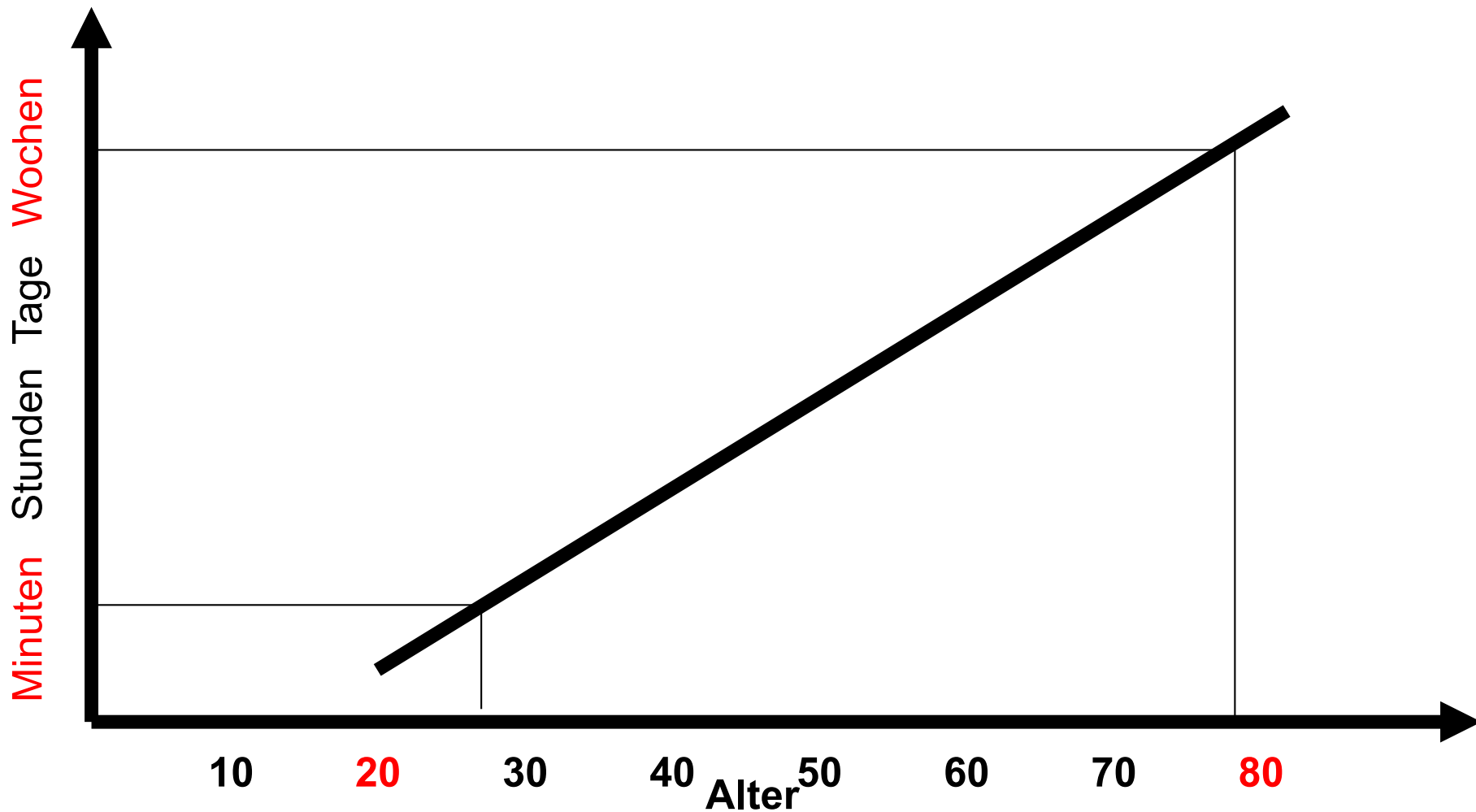
Normale Veränderungen *Erektionsfähigkeit*



Normale Veränderungen *Härte* der Erektion



Normale Veränderungen *Intervall* zwischen Erektionen



Ursache der ED

- **Ca. 70 %** überwiegend organisch bedingt
- **Psychogen (=funktionell)**
- **Gemischt**

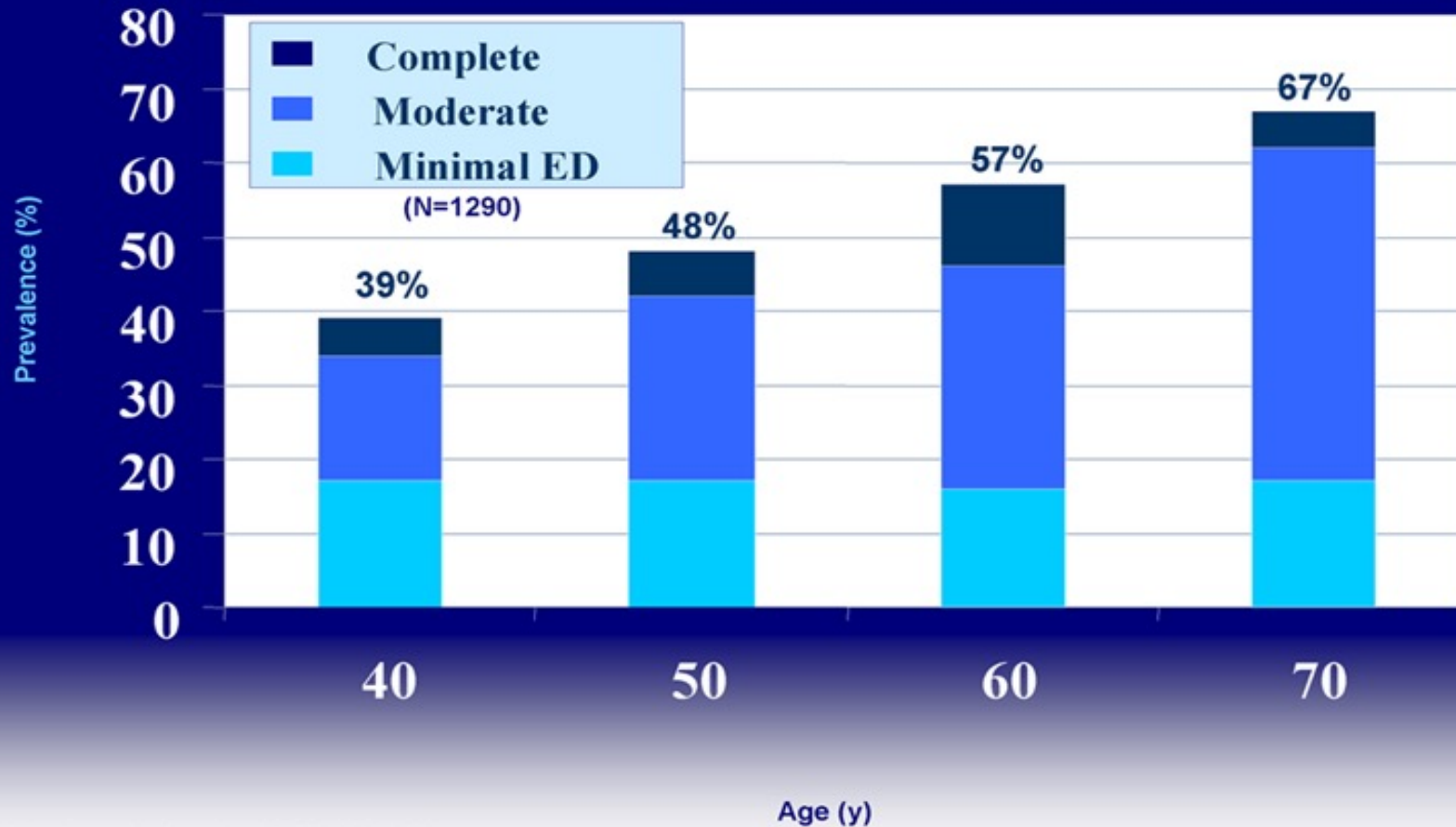
Alter und ED

Alter in sich ist nicht die direkte Ursache der ED sondern mit zunehmendem Alter nimmt die Wahrscheinlichkeit zu, Krankheiten, Zustände oder Medikamente zu haben, die eine ED verursachen kann

Erectile Dysfunction

Age & Prevalence

Massachusetts Male Aging Study¹



3. Feldman HA, et al. J Urol. 1994;151:54-61

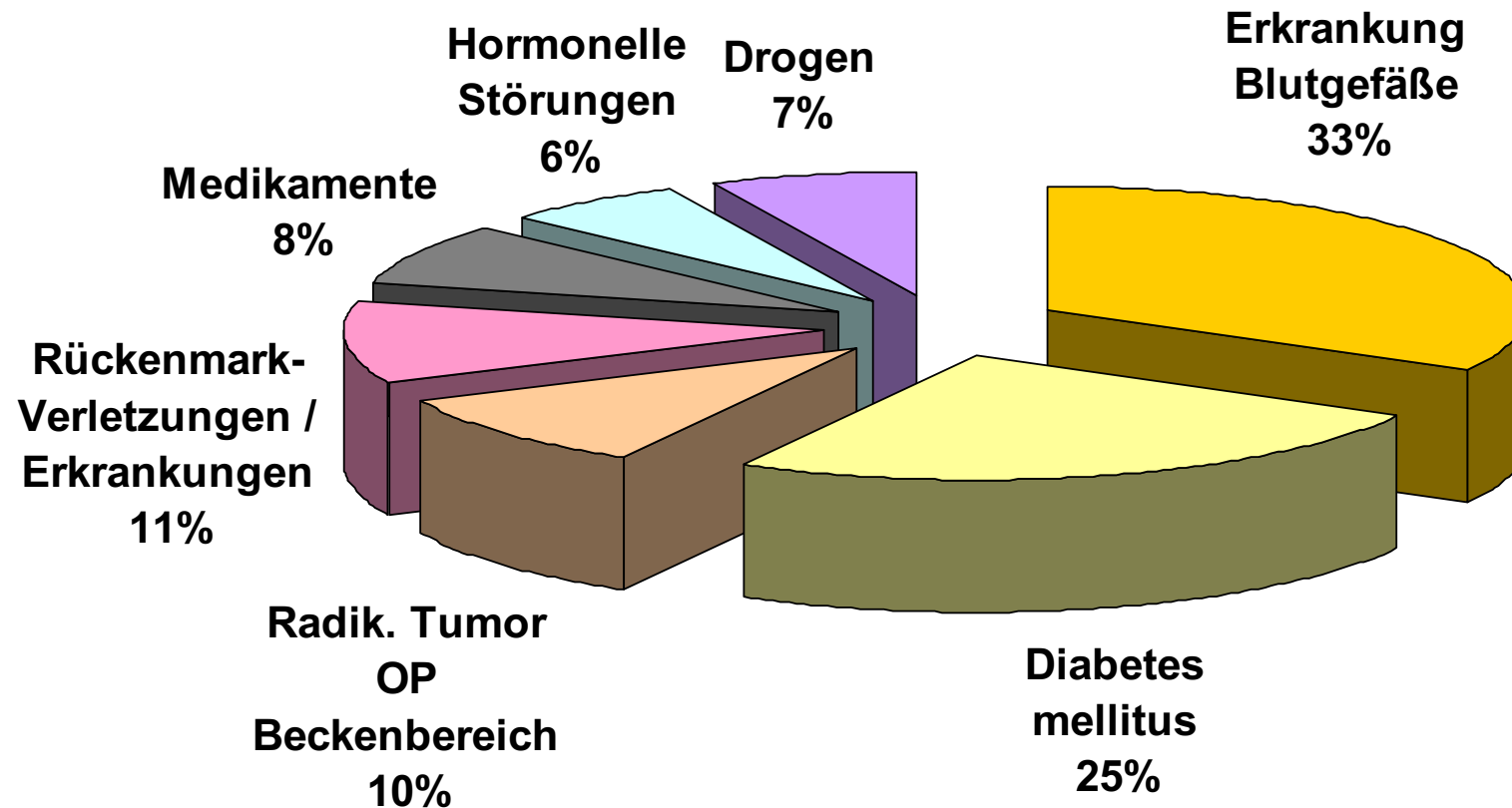


Altersabhängige Frequenz der sexuellen Aktivität

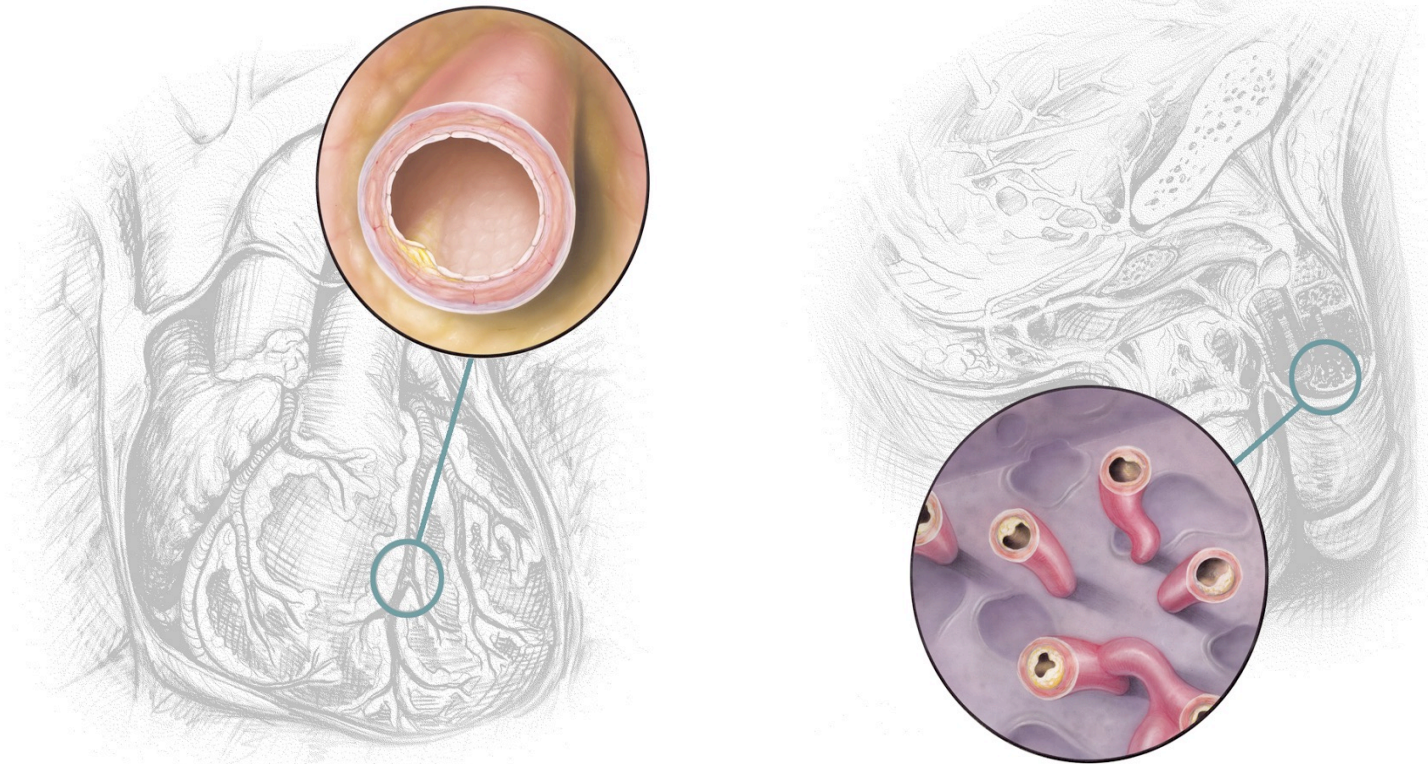
Alter	Sexuell aktiv (Coitus, Masturbation)	Unzufrieden mit Sexualleben
30–39	96%	35%
40–49	92%	32%
50–59	89%	32%
60–69	84%	41%
70–79	71%	33%

Engelmann, Dissertation, 1999

Die häufigsten Ursachen der organogenen erektilen Dysfunktion



KHK und ED



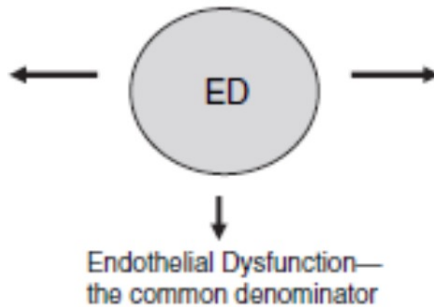
Risk Factors

Coronary Heart Disease

Smoking
Blood pressure
Cholesterol
Diabetes

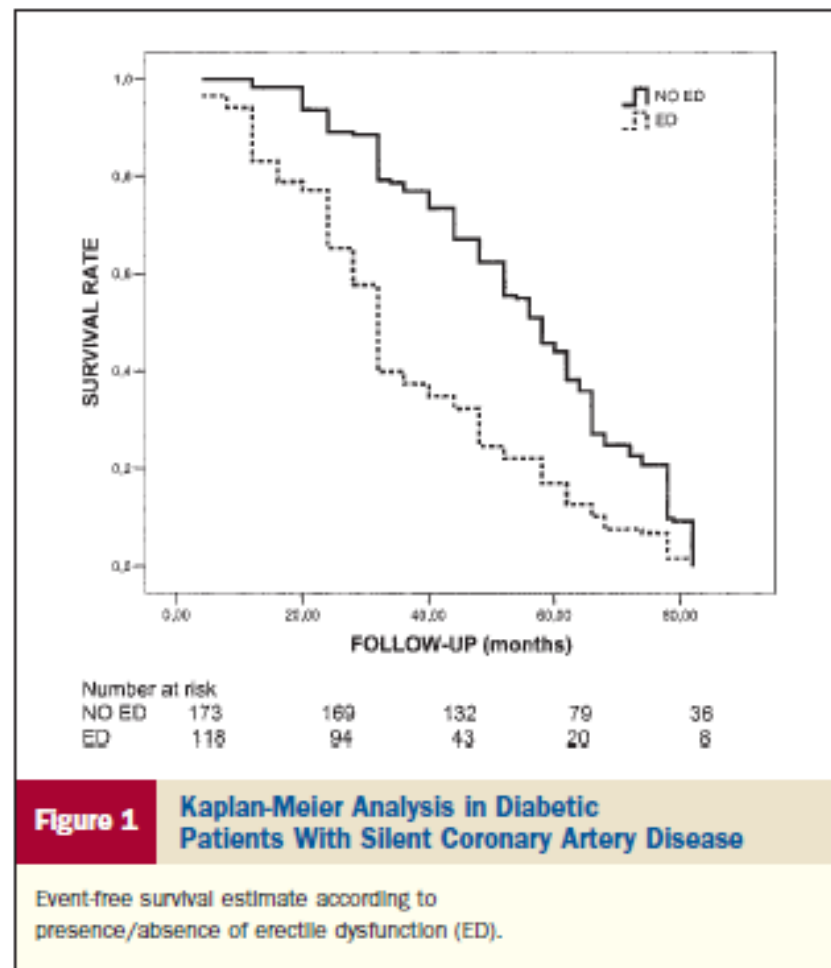
Erectile Dysfunction

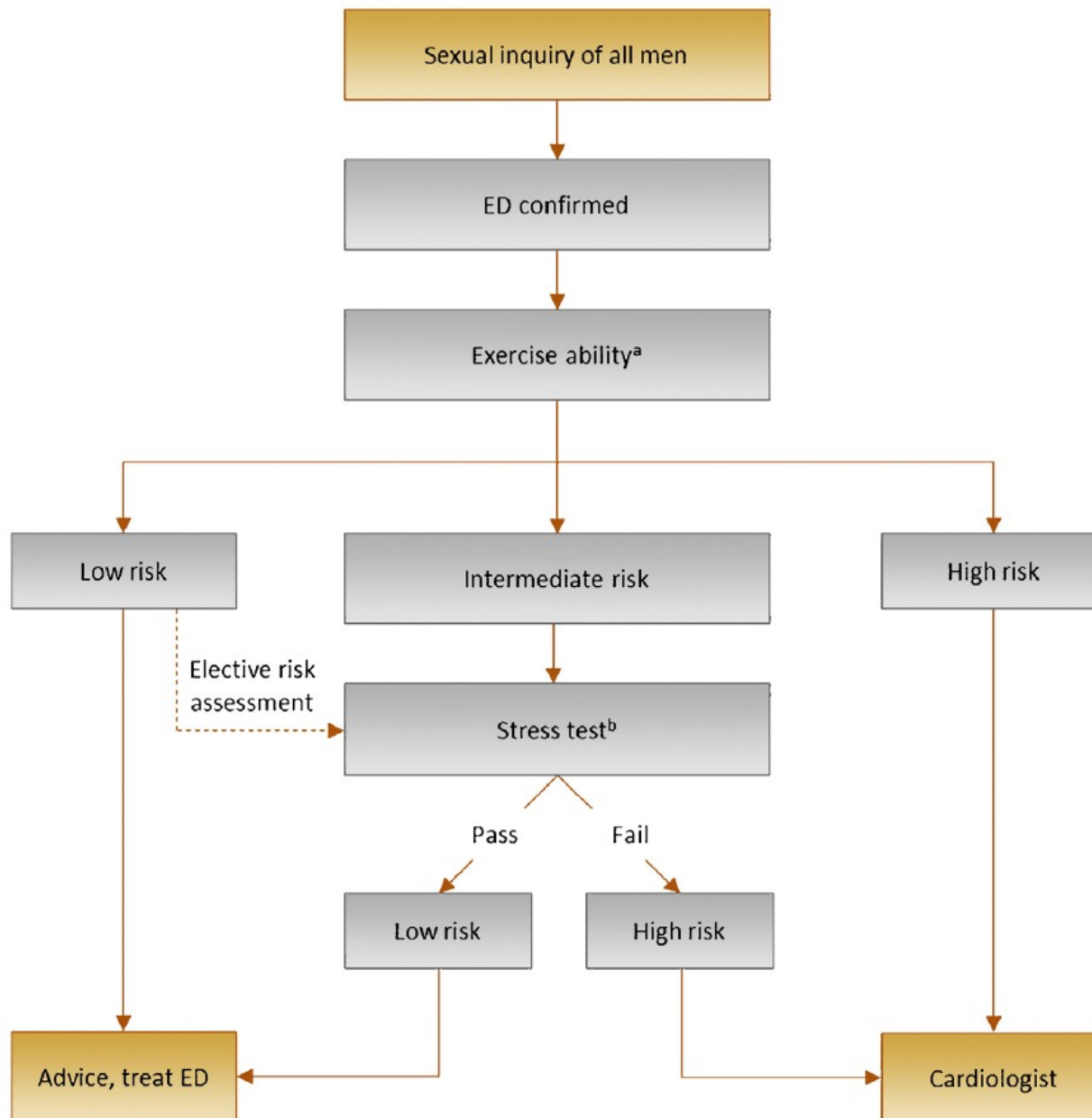
Smoking
Blood Pressure
Cholesterol
Diabetes



Erectile Dysfunction as a Predictor of Cardiovascular Events and Death in Diabetic Patients With Angiographically Proven Asymptomatic Coronary Artery Disease

Journal of the American College of Cardiology Vol. 51, No. 21, 2008



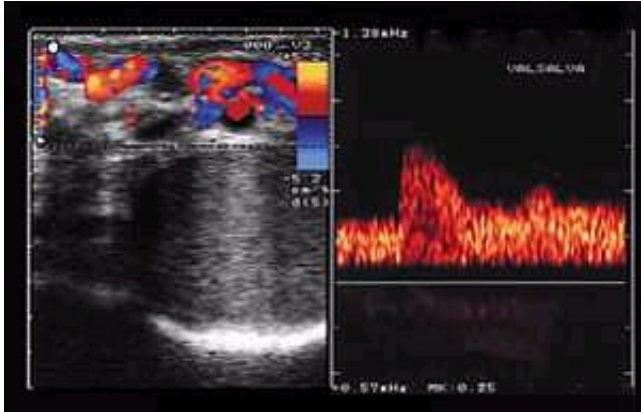


ED-Diagnostik

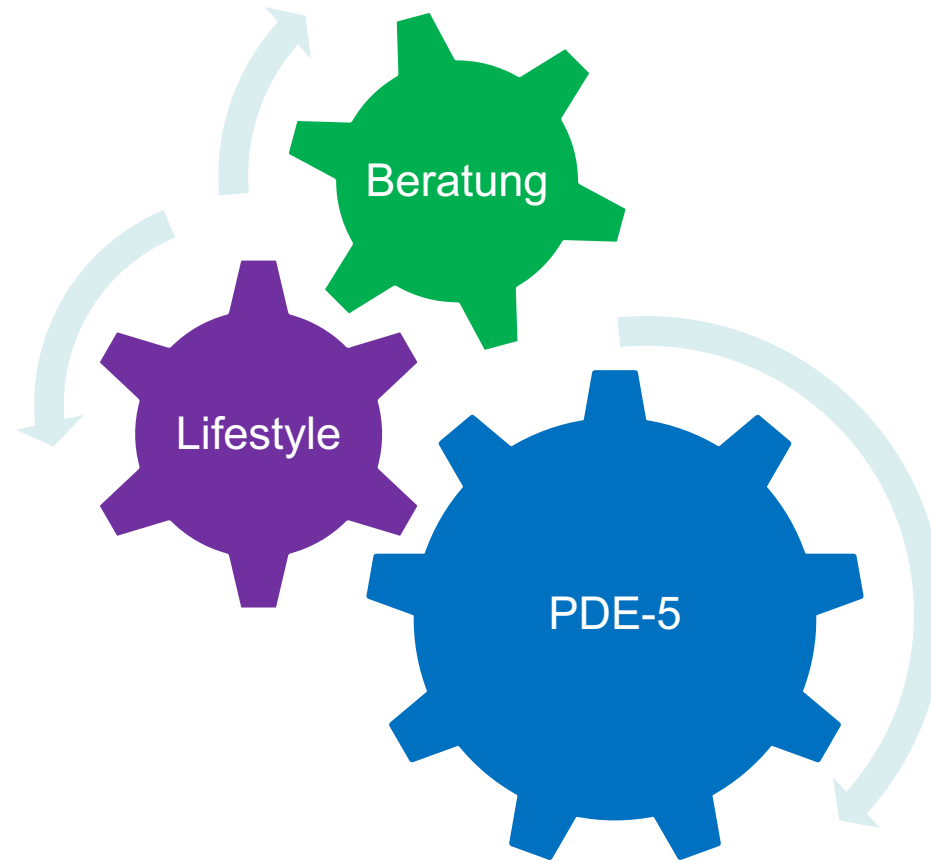
- **Offene Einstiegsfrage bei allen Patienten**
(“Wie ist Ihre Sexualfunktion“)
- **Basisdiagnostik:**
bei allen Patienten
Hausarzt oder Urologe
- **Erweiterte Diagnostik:**
bei selektionierten Patienten
Urologe

1. Wie oft waren Sie während der letzten 4 Wochen in der Lage, während sexueller Aktivitäten eine Erektion zu bekommen?

- | | | |
|--|--------------------------|---|
| Keine sexuelle Aktivität | <input type="checkbox"/> | 0 |
| Fast immer oder immer | <input type="checkbox"/> | 5 |
| Meistens (viel mehr als die Hälfte der Zeit) | <input type="checkbox"/> | 4 |
| Manchmal (etwa die Hälfte der Zeit) | <input type="checkbox"/> | 3 |
| Selten (weniger als die Hälfte der Zeit) | <input type="checkbox"/> | 2 |
| Fast nie oder nie | <input type="checkbox"/> | 1 |



Therapieoptionen



Unerwünschte Ereignisse

Unerwünschte Ereignisse	Patienten (%)	
	Sildenafil	Plazebo
Kopfschmerzen	15.8	3.9
Gesichtsrötung	10.5	0.7
Verdauungsbeschwerden	6.5	1.7
Verstopfte Nase	4.2	1.5
Harnwegsinfektion (?)	3.1	1.5
Sehstörungen	2.7	0.4
Diarrhoe	2.6	1.0
Schwindel	2.2	1.2

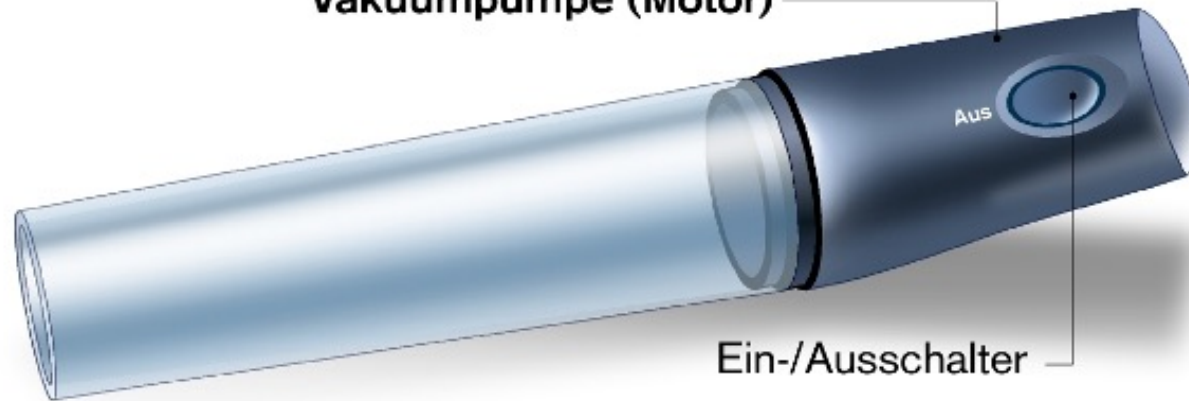
Morales, Inter J Impot Res, 1998

Elimination von Risikofaktoren

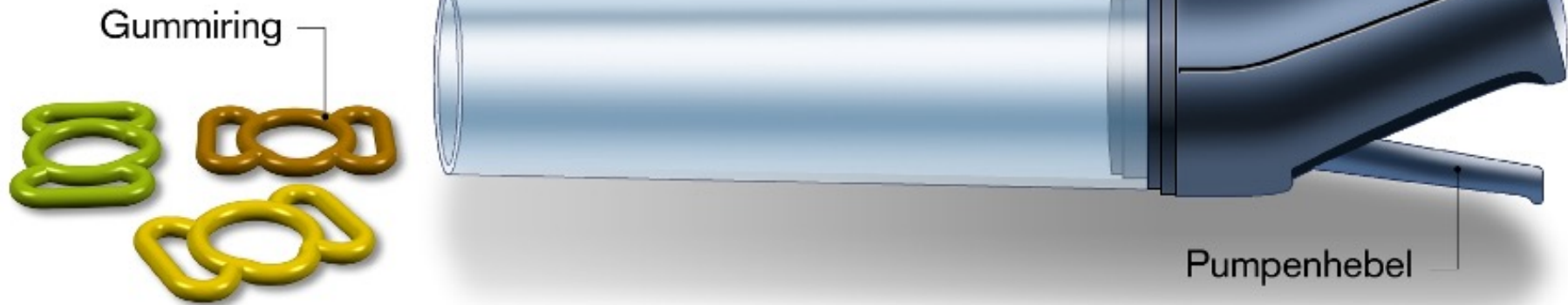
- **Veränderungen des Lebensstils** lohnen sich!
 - Raucher sollten versuchen das Rauchen einzustellen
 - Auch der übermäßige Genuss von Alkohol sowie Stress wirkt sich negativ auf die Fähigkeit zur Erektion aus
- **Begleiterkrankungen** wie Hypertonie, Hyperlipidämie, Diabetes etc. sollten **behandelt** werden

Vakuumpumpe

Vakuumpumpe (Motor)



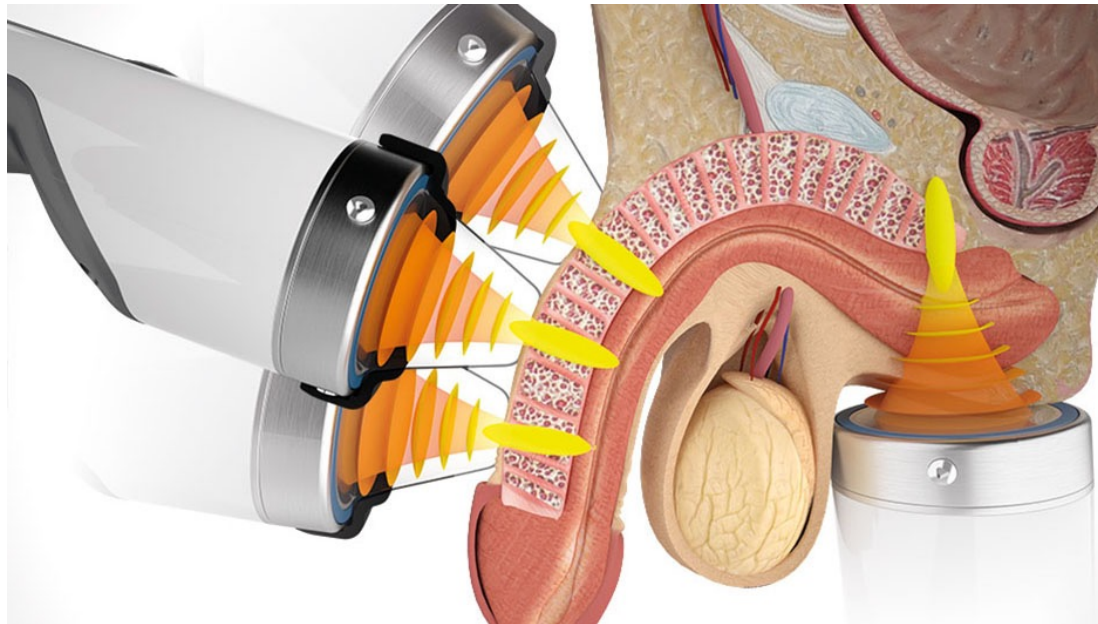
Vakuumpumpe (mechanisch)



Low-Intensity Shock Wave Therapy in Sexual Medicine—Clinical Recommendations from the European Society of Sexual Medicine (ESSM)



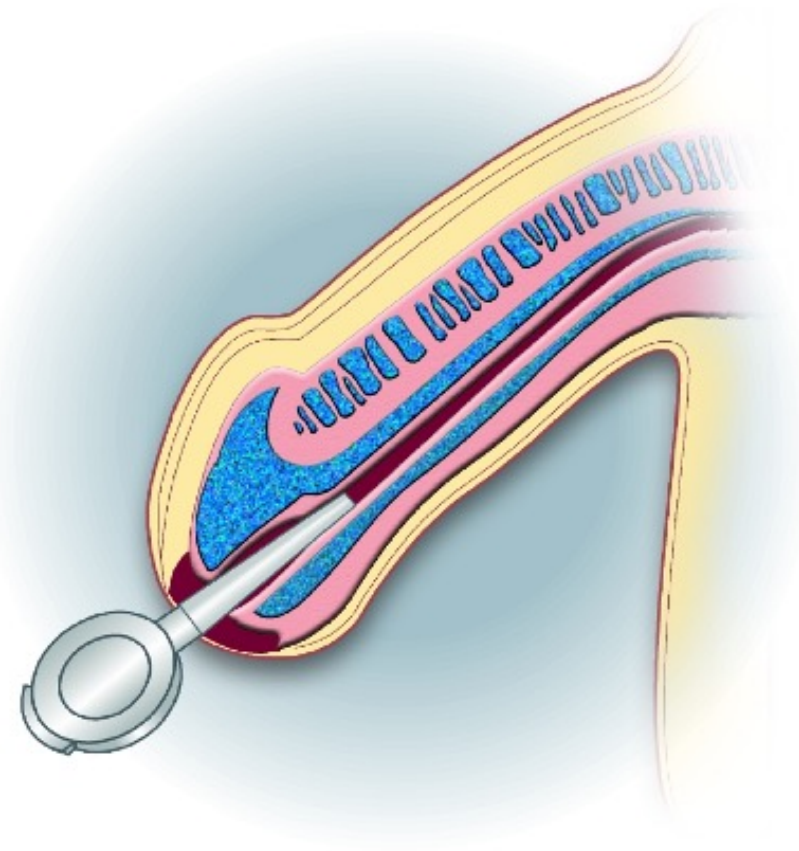
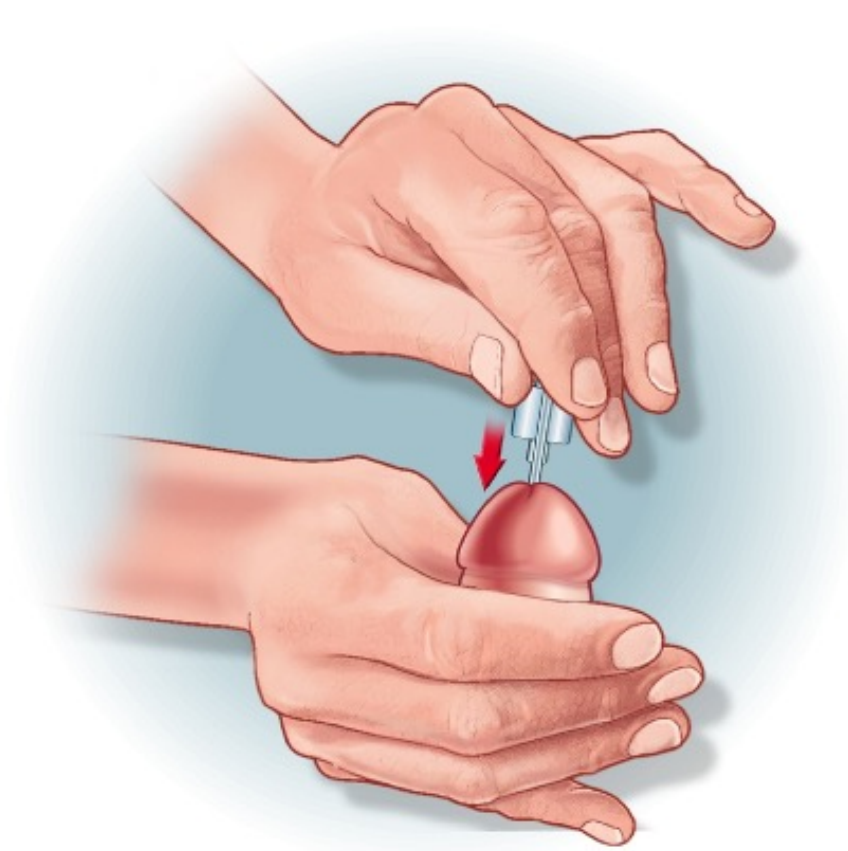
Paolo Capogrosso, MD,¹ Anders Frey, MD,² Christian Fuglesang S. Jensen, MD,³ Giulia Rastrelli, MD, PhD,⁴ Giorgio I. Russo, MD, PhD,⁵ Josep Torremade, MD,⁶ Maarten Albersen, MD, PhD,^{7,8} Ilan Gruenwald, MD,⁹ Yacov Reisman, MD,¹⁰ and Giovanni Corona, MD, PhD¹¹



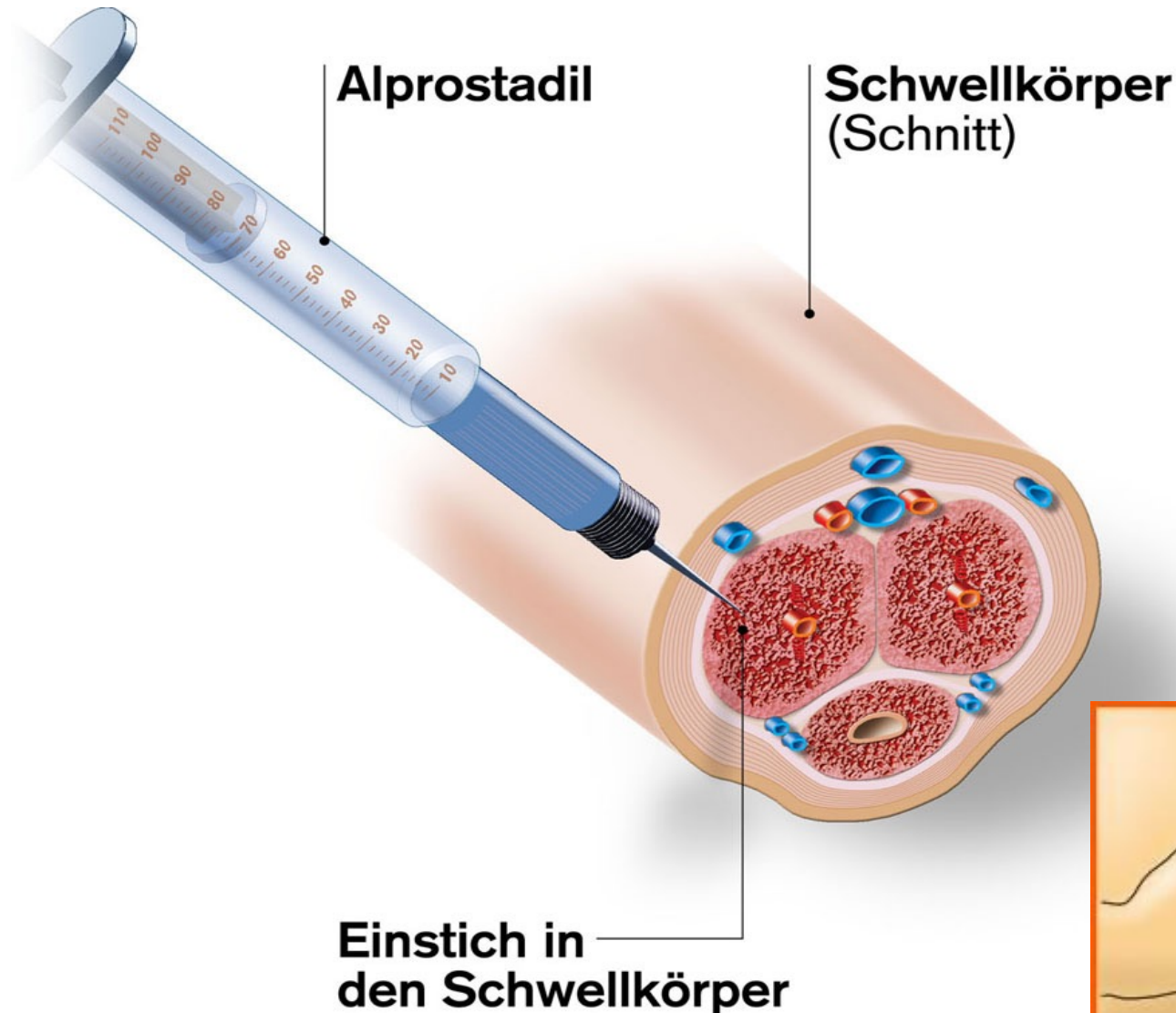
Conclusions: LISWT is a safe and well-tolerated procedure but its efficacy for the treatment of ED is doubtful and deserves more investigation.

Transurethrale Medikation

MUSE (= **M**edical **U**rethral **S**ystem for **E**rection):
Einmalsystem zur Verabreichung von Alprostadil (PG E1) in die Harnröhre



Schwellkörperautoinjektionstherapie



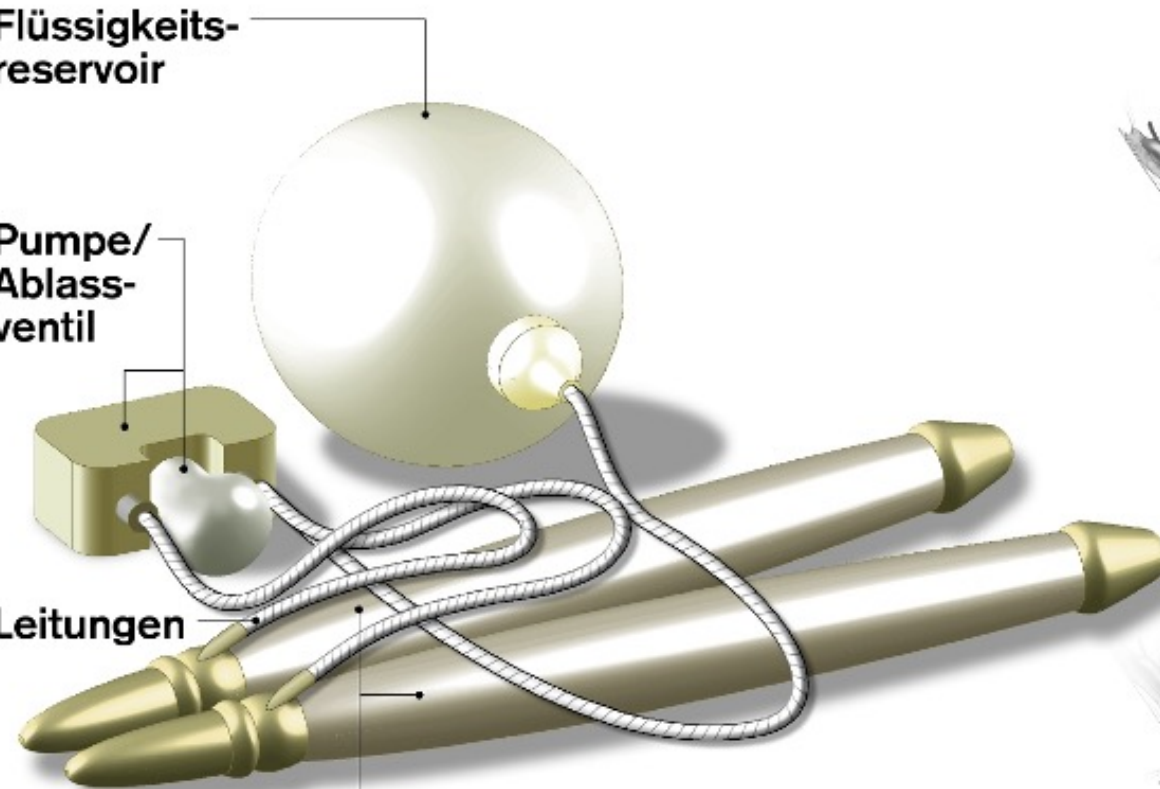
Schwellkörperimplantate

Flüssigkeits-
reservoir

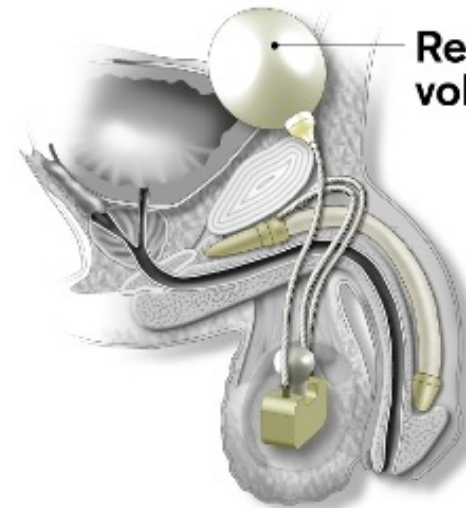
Pumpe/
Ablass-
ventil

Leitungen

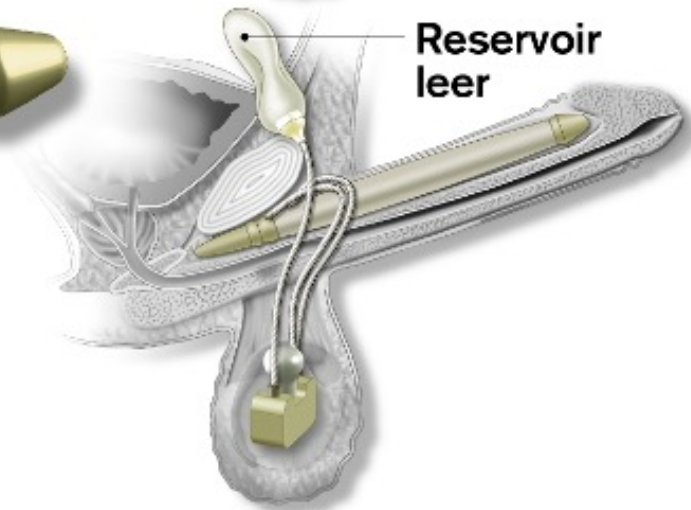
Zylinder



Reservoir
voll



Reservoir
leer



Libido



Männliche Sexualität



Erektion



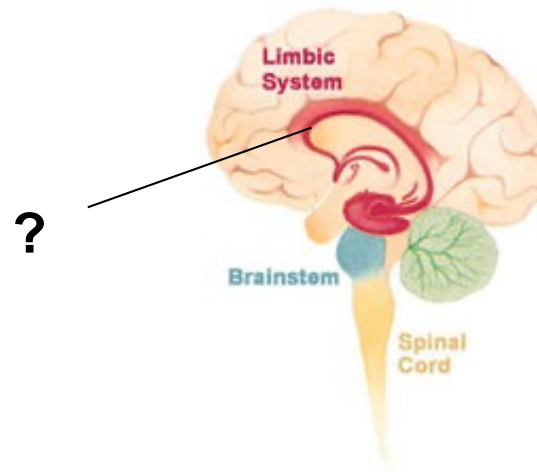
Orgasmus



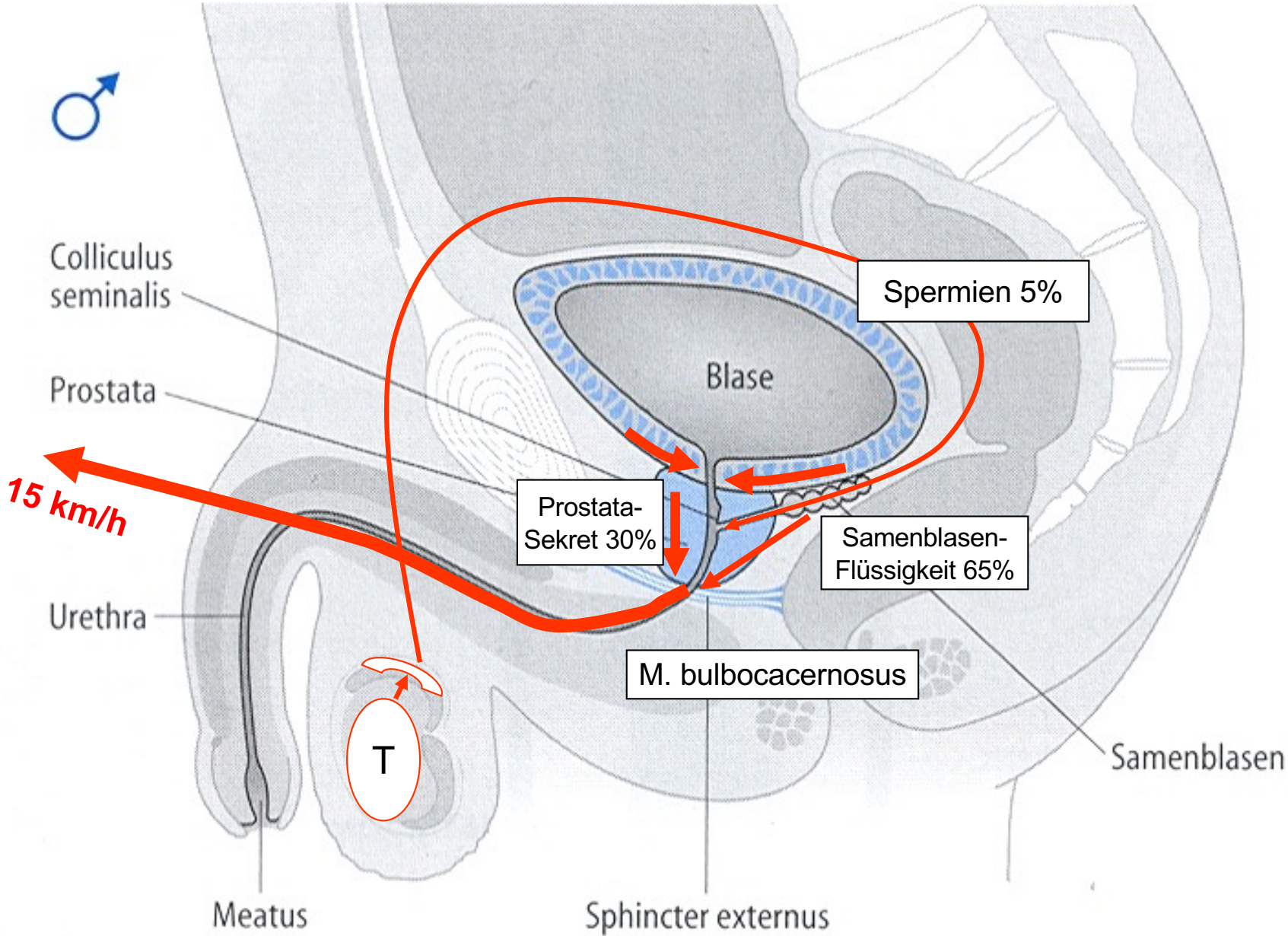
Ejakulation

Störungen Orgasmus

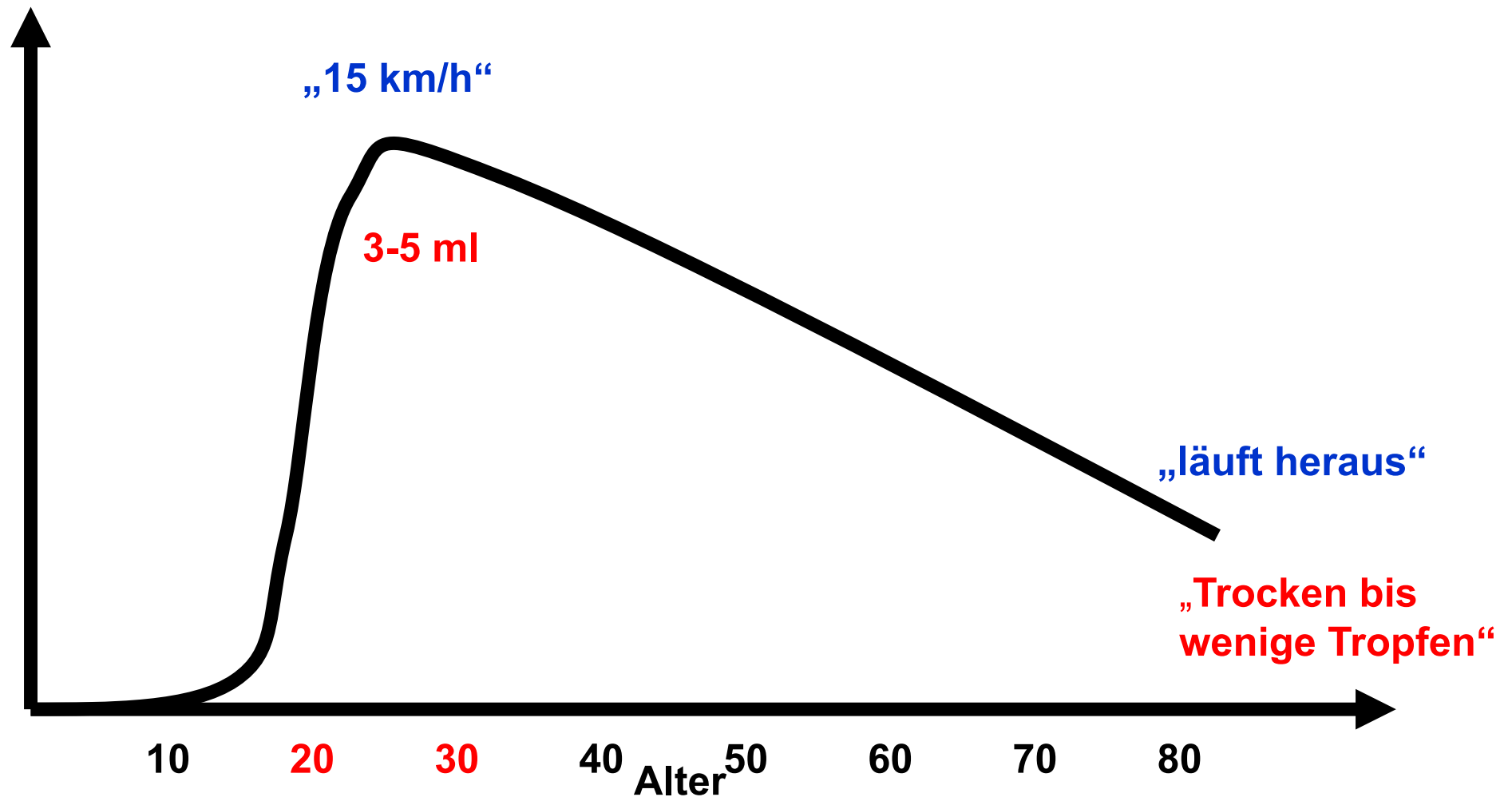
- **Anorgasmie**
= **Unfähigkeit den Orgasmus zu erreichen**



Ejakulation



Normale Veränderungen Ejakulation (**Menge**, **Kraft des Ausstosses**)

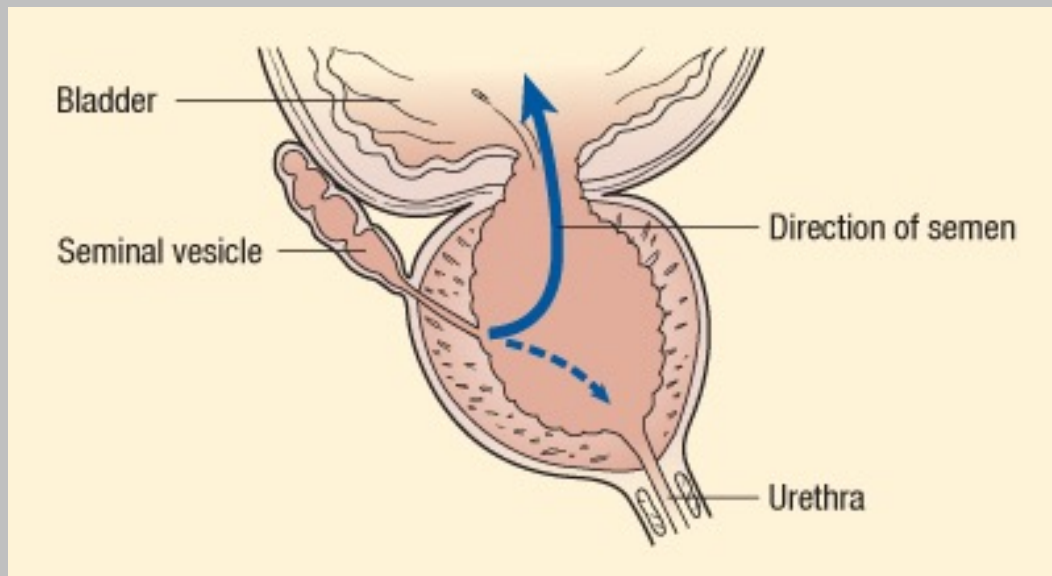


Störungen Ejakulation

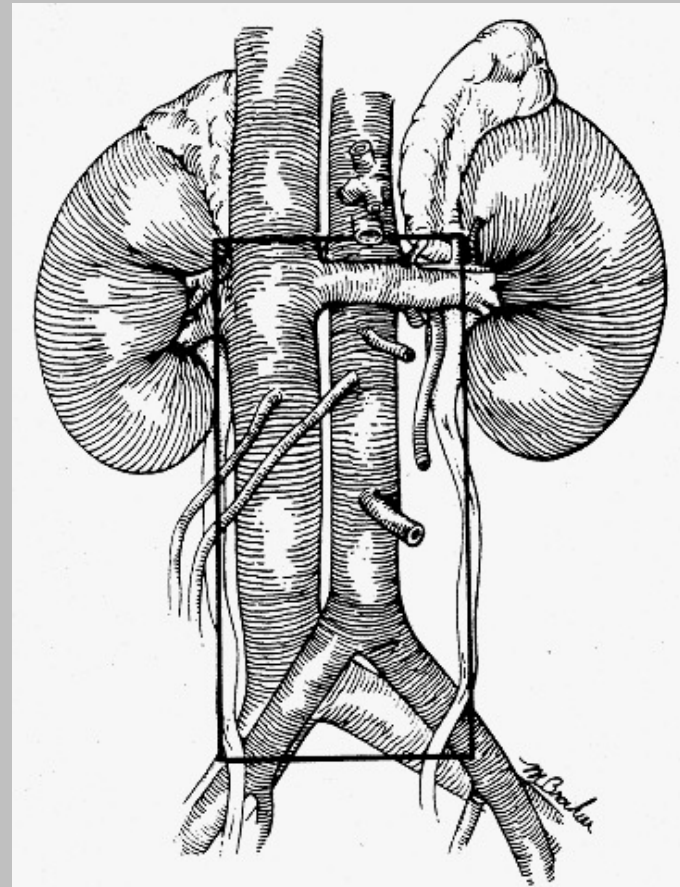
- **Fehlende Ejakulation**
- **Ejaculatio praecox**
= frühzeitiger Samenerguss

Fehlende Ejakulation

Unter Alphablockade
Nach TUR-P



Nach retroperitonealer
Lymphknotenausräumung
(Hodentumor)

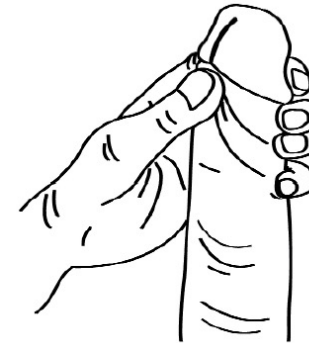


Ejaculatio praecox: **Therapie**

- „stop and go“ Übungen
allein oder mit Partnerin



- Squeeze Technik

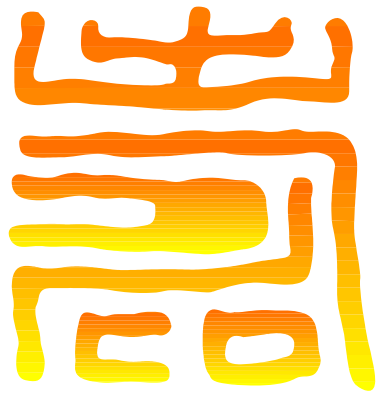


- EMLA Salbe : LA, 30' vor GV
→ Glans weniger empfindlich



- Dapoxetine (Priligy®) : Noradrenalin- und
Dopamin-Agonist, wirkt im ZNS
- Antidepressiva

Libido

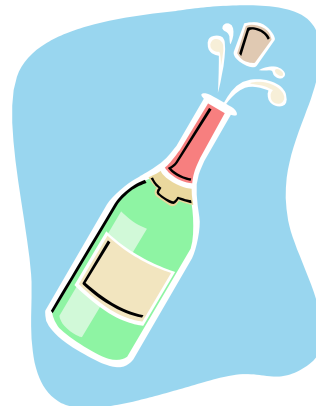


Orgasmus

Männliche Sexualität

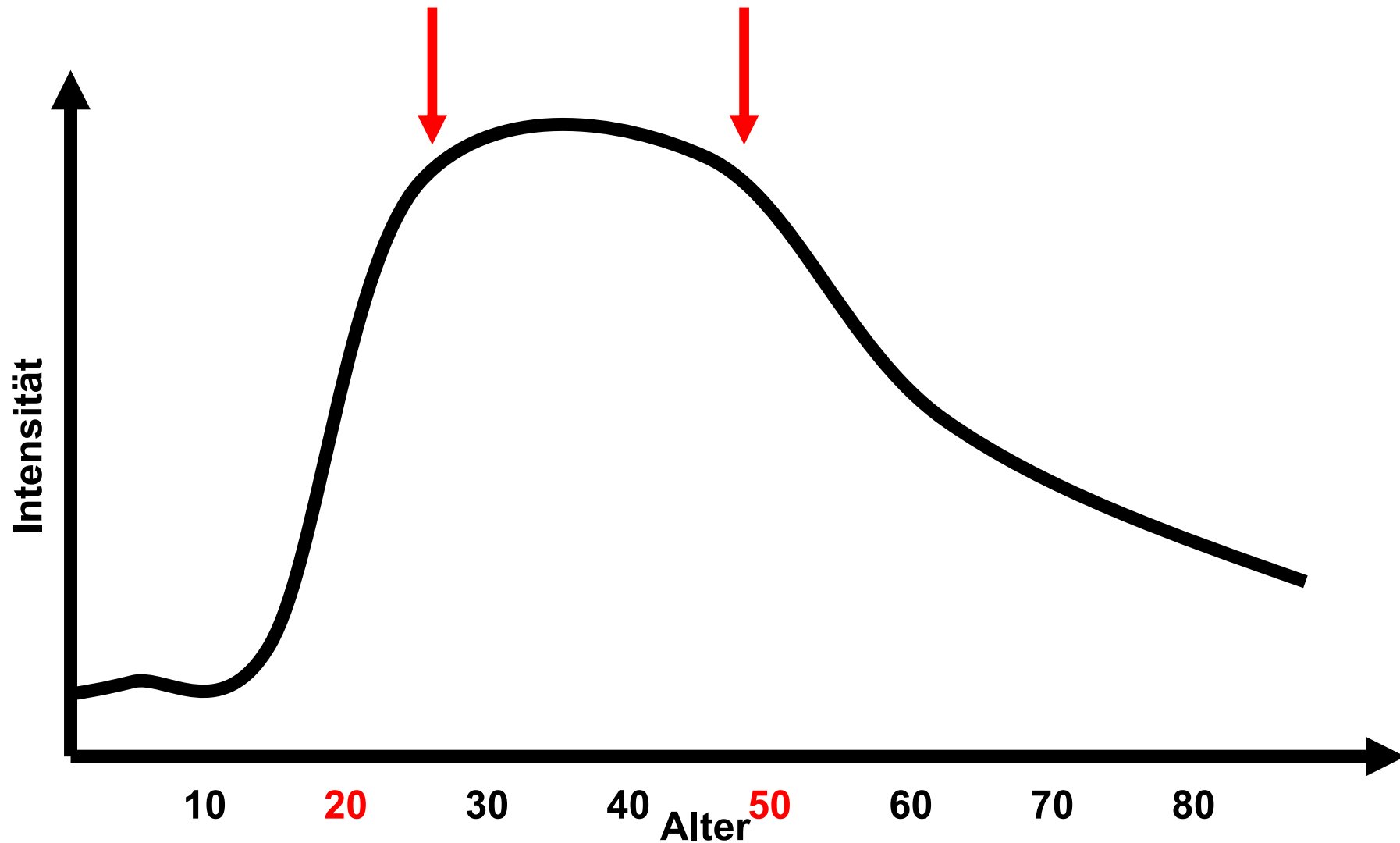


Erektion

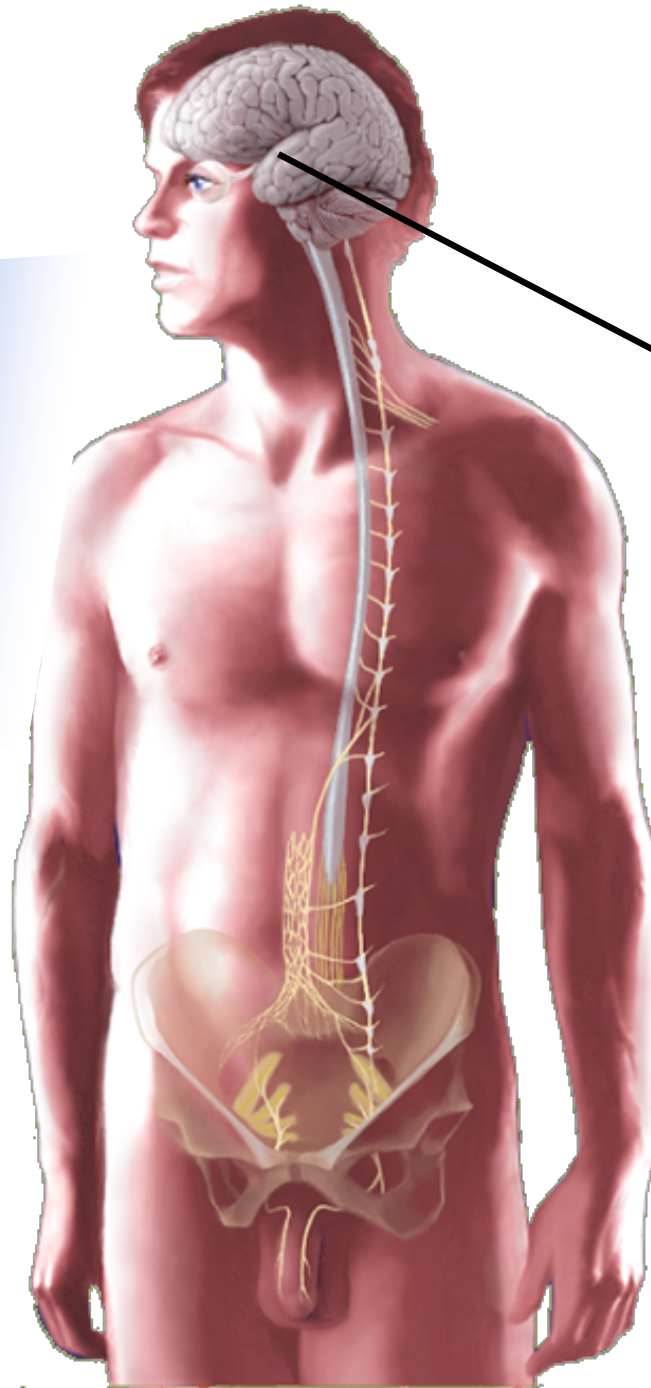


Ejakulation

Normale Veränderungen männliche *Libido*

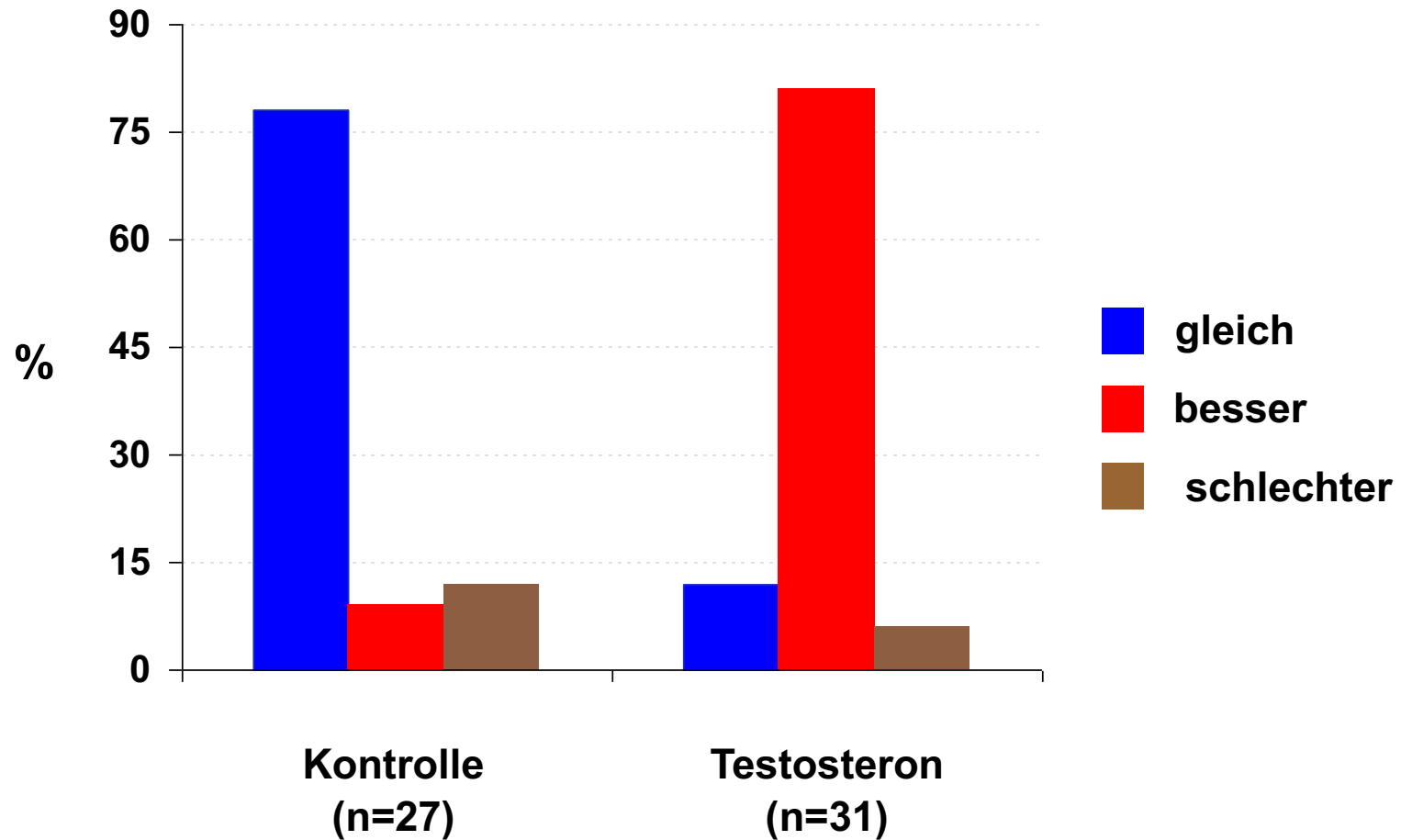


Libido

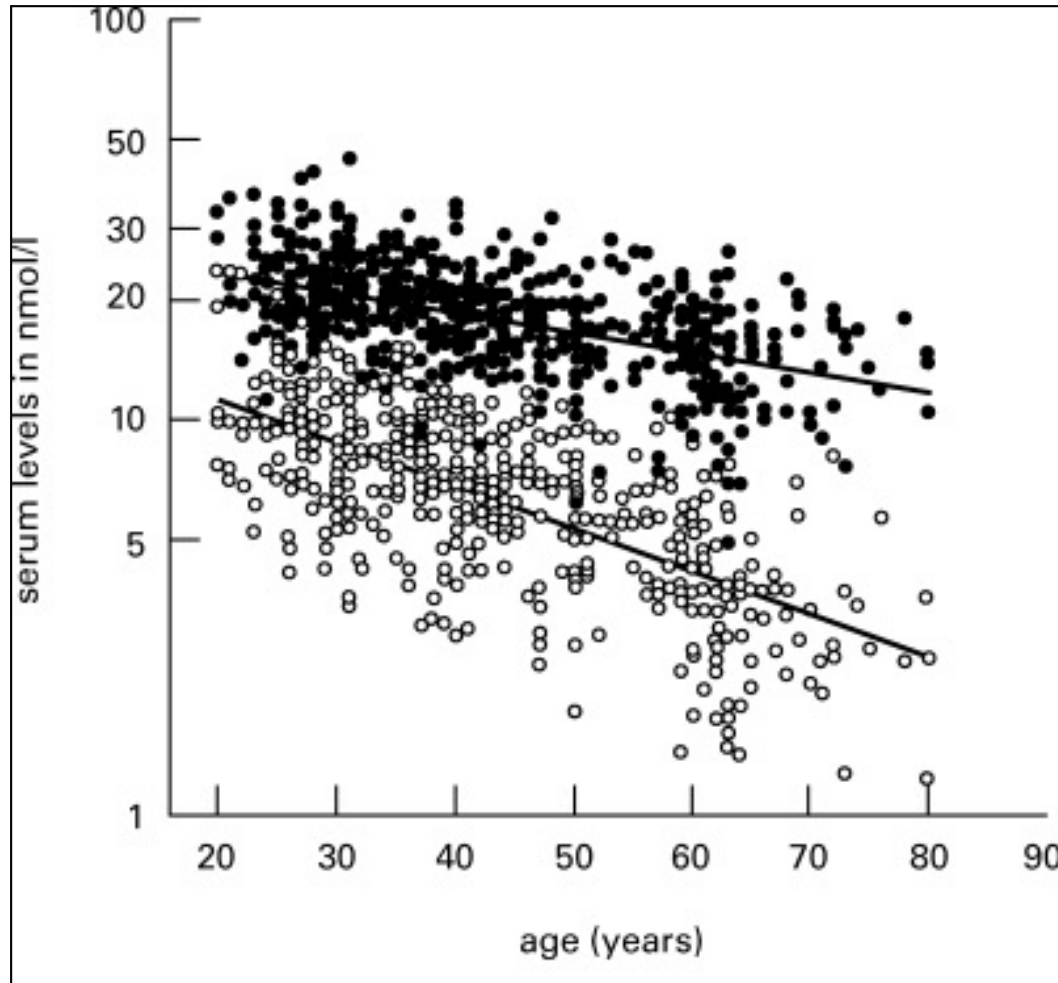


Hypothalamus

Langzeit Testosteronersatz (2 Jahre) bei älteren hypogonadale Männern: Einfluss auf die Libido

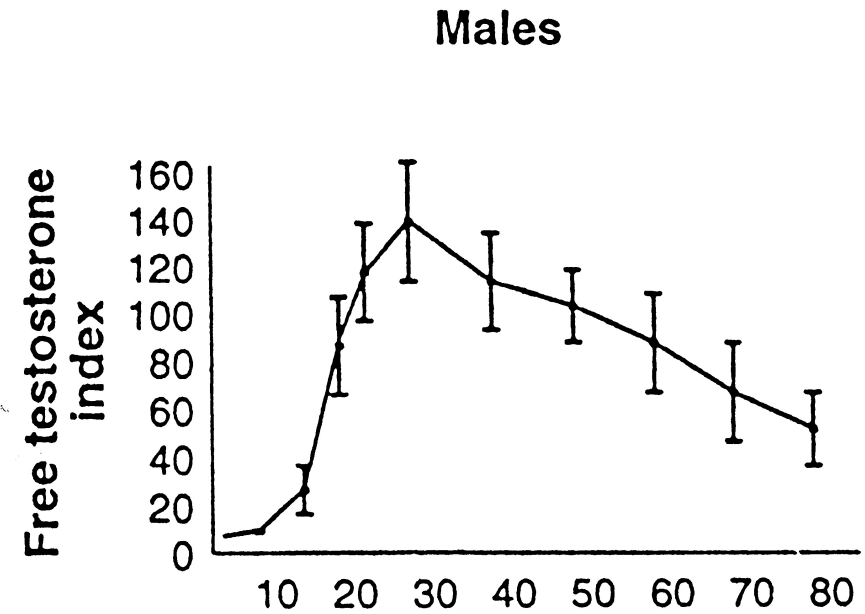
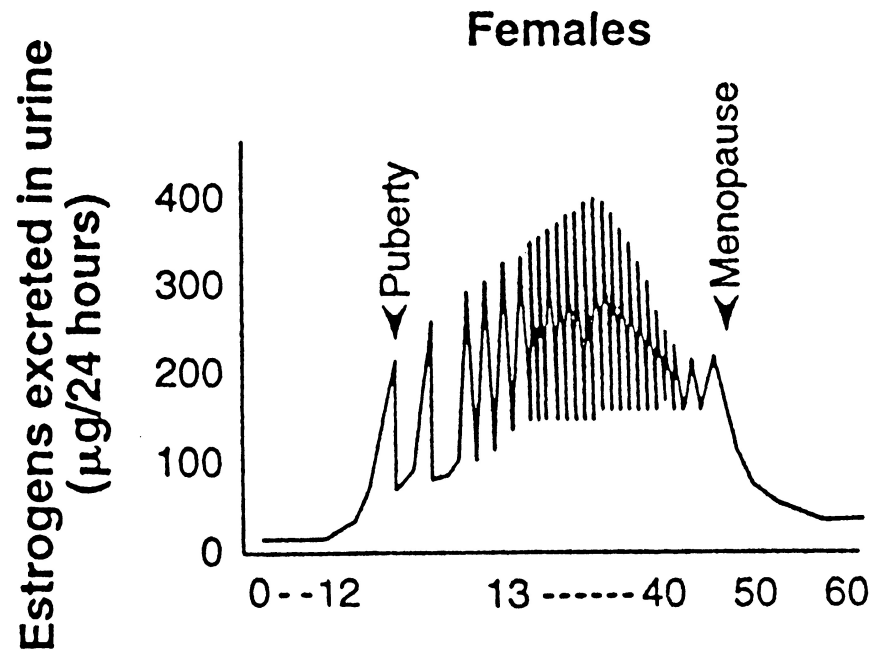


Altersabhängige Veränderung der Testosteronspiegel



- Totales Testosteron
- Verfügbares Testosteron

„Menopause - Andropause“



Wirkung des Testosteron

Vitalität

Aggressivität

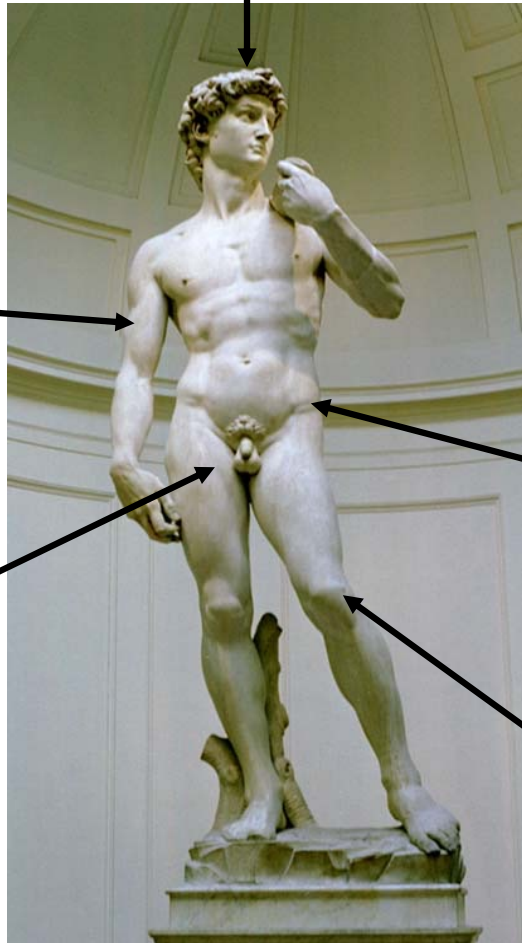
Konzentrationsfähigkeit

Muskelkraft

Libido

**Geringer
Fettansatz**

**Erhöhte
Knochendichte**

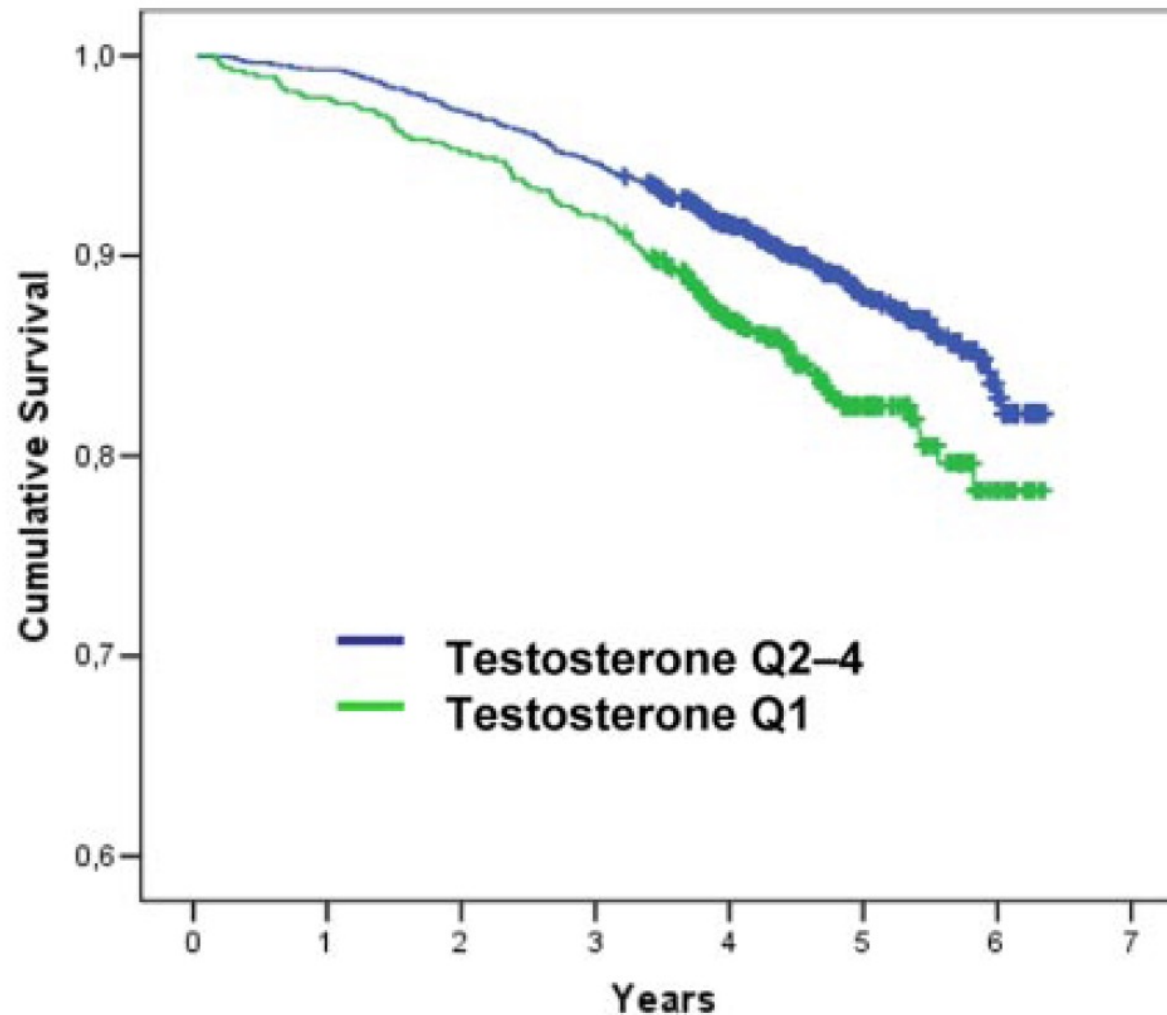


Androgen
Defizit des
Alternden
Mannes

- Klimakterium des Mannes
- Klimakterium Virile
- Andropause
- ADAM / PADAM
- PEDAM (**P**artielles **E**ndokrines
Defizit des **a**lternden
Mannes)
- LOH (**L**ate **o**nset
hypogonadism)



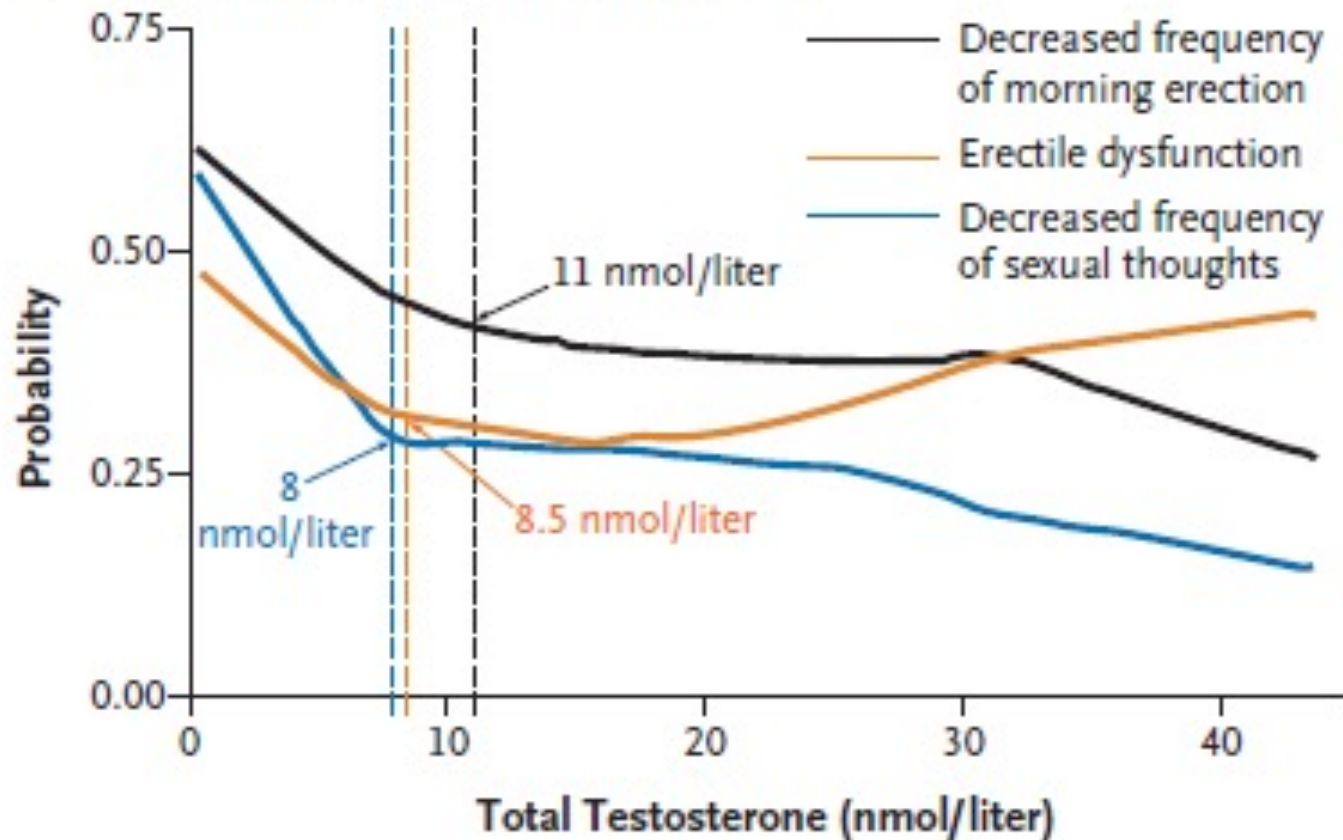
Low Serum Testosterone and Estradiol Predict Mortality in Elderly Men



**“Conclusions:
Elderly men with
low serum
testosterone and
estradiol have
increased risk of
mortality, ...”**

Identification of Late-Onset Hypogonadism in Middle-Aged and Elderly Men

A Sexual Symptoms and Total Testosterone



Je niedriger T, desto höher die Wahrscheinlichkeit von sexuellen Symptomen

Definition eines Testosteronmangels im (Mittel-)Alter: Endocrine Society Consensus Meeting Wann sollen wir therapieren?

Box 2 Diagnostic criteria for androgen deficiency.

- A diagnosis of androgen deficiency should be considered in men who have consistent symptoms and signs that include: loss of libido, erectile dysfunction, depression, lethargy, inability to concentrate, sleep disturbance, irritability, decreased interest in activities, osteoporosis, increased visceral fat, decreased lean body mass, loss of muscle strength, regression of secondary sexual characteristics^{67,68,73}
- As many of the above symptoms and signs can be nonspecific, the diagnosis needs to be made after at least two separate early morning blood samples demonstrating low testosterone levels⁷⁰⁻⁷³
- Serum total testosterone level <8 nmol/l or free testosterone level <170 pmol/l are generally accepted as being consistent with androgen deficiency, but thresholds of total testosterone level <10.4 nmol/l or <6.9 nmol/l in older men have also been recommended.⁷¹⁻⁷³ Men with total testosterone level

Table 3 – Recommendations for testosterone therapy outcome

Recommendations	Strength rating
The use of testosterone therapy in eugonadal men is not indicated.	Strong
Use testosterone as first-line treatment in patients with symptomatic hypogonadism and mild ED.	Strong
Use combination of PDE5Is and testosterone therapy in more severe forms of ED as it may result in better outcomes.	Weak
Use conventional medical therapies for severe depressive symptoms and osteoporosis.	Strong
Do not use testosterone therapy to improve body composition, reduce weight, and benefit cardiometabolic profile.	Weak
Do not use testosterone therapy to improve cognition vitality and physical strength in ageing men.	Strong

Endokrinologisch-Urologischer Consensus

Abklärung:

- *Wen:* > 2 suggestive Symptome (spez. Libido ↓ **cave unspez**)
- *Wie:* totales Testosteron, 2x morgens
Ausschluss 1° / 2° Hypogonadismus (LH, FSH, evtl MRI (?))

Therapie:

- *wann:* **Testo <7-10 (Christ-Crain), <15 (Gasser)**
- *Wie:* Nebido 1000mg i.m. 10-12wtl. vs Testogel 5g/d

Monitoring:

- PSA, Prostatapalpation, BB vor Therapie & nach 3 & 6 Mt, dann jährlich

Risiken:

- kardiovaskulär? Prostataca? **KEINE Langzeitdaten!!!**

Weiterführende Literatur

EURURO-9434; No. of Pages 25

ARTICLE IN PRESS

EUROPEAN UROLOGY XXX (2021) XXX-XXX

available at www.sciencedirect.com
journal homepage: www.europeanurology.com



Review – Andrology

European Association of Urology Guidelines on Sexual and Reproductive Health—2021 Update: Male Sexual Dysfunction

Andrea Salonia^{a,b,}, Carlo Bettocchi^c, Luca Boeri^d, Paolo Capogrosso^e, Joana Carvalho^f, Nusret Can Cilesiz^g, Andrea Cocci^h, Giovanni Coronaⁱ, Kostantinos Dimitropoulos^{j,k}, Murat Gül^l, Georgios Hatzichristodoulou^m, T. Hugh Jonesⁿ, Ates Kadioglu^o, Juan Ignacio Martínez Salamanca^p, Uros Milenkovic^q, Vaibhav Modgil^r, Giorgio Ivan Russo^s, Ege Can Serefoglu^t, Tharu Tharakan^{u,v}, Paolo Verze^w, Suks Minhas^u,
on behalf of the EAU Working Group on Male Sexual and Reproductive Health*