



Bayer HealthCare
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Metabolic syndrome: treating with testosterone

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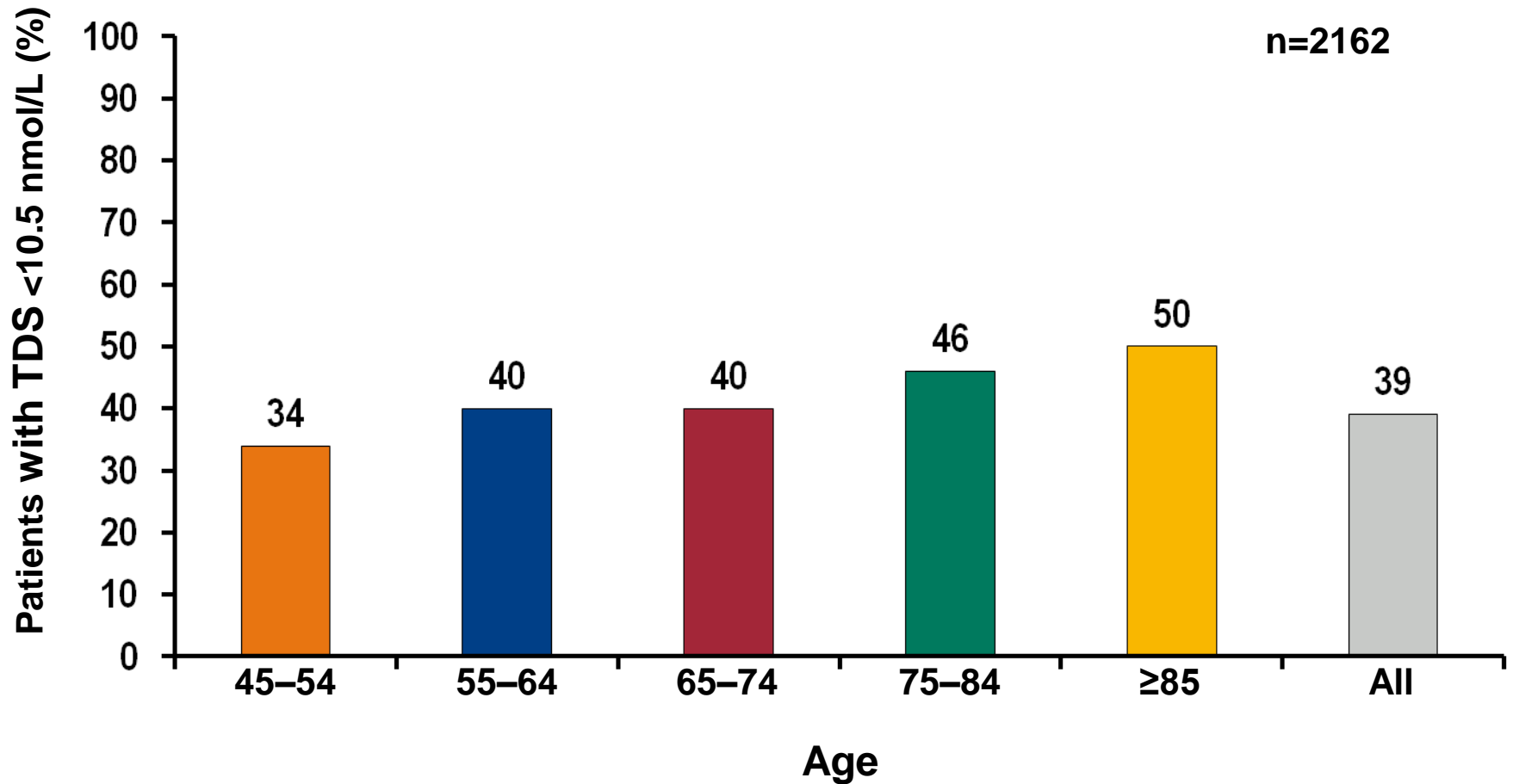
Center for Reproductive Medicine and Andrology
University Clinics, Muenster, Germany



TESTOSTERONE DEFICIENCY: A REMINDER



Men with TDS as patients in general practice



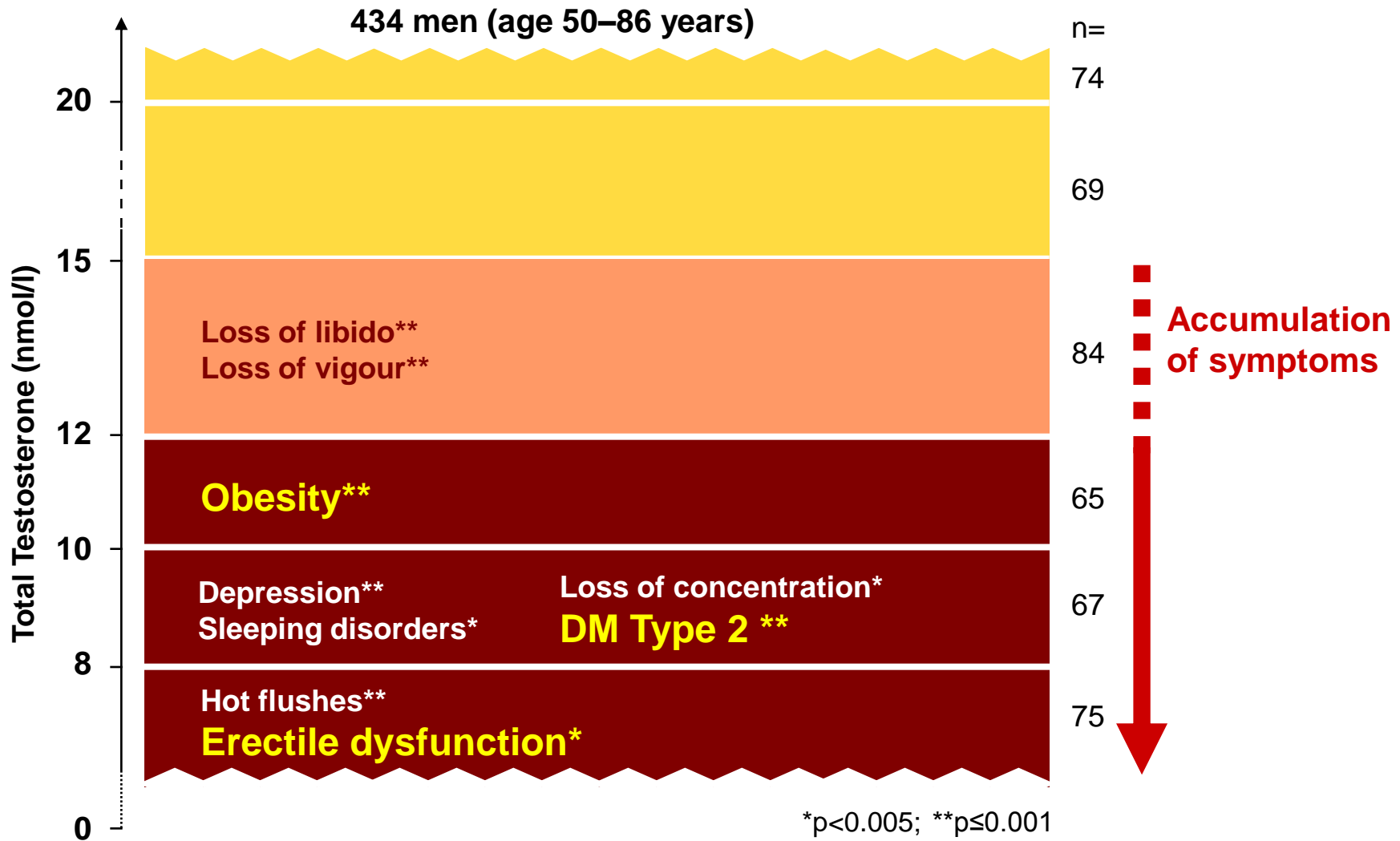
Men with TDS as patients in general practice

- Complaints related to testosterone levels

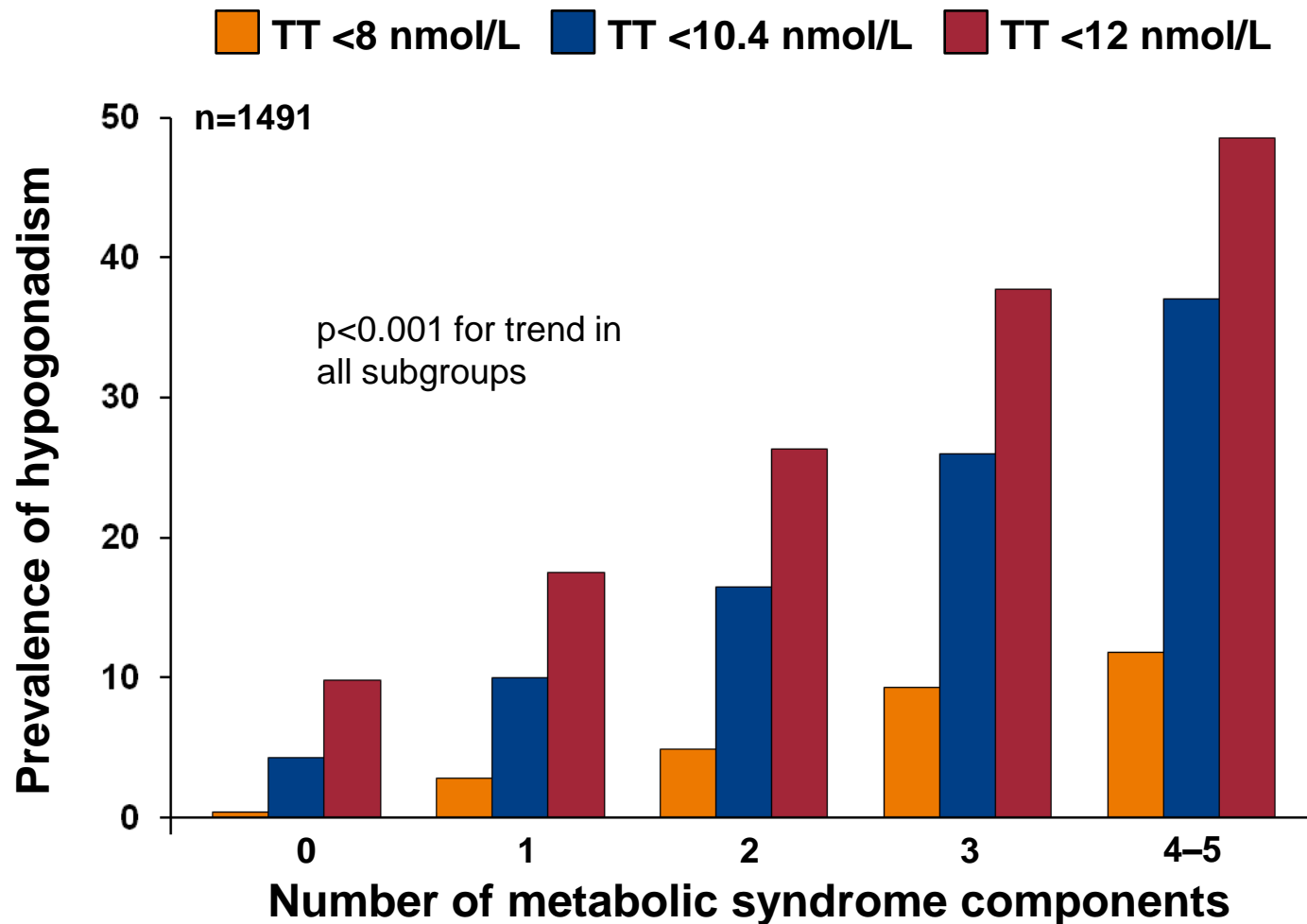
Risk factor/condition	Hypogonadism prevalence rate (95% CI)	Odds ratio (95% CI)
Obesity	52.4 (47.9–56.9)	2.38 (1.93–2.93)
Diabetes mellitus	50.0 (45.5–54.5)	2.09 (1.70–2.58)
Hypertension	42.4 (39.6–45.2)	1.84 (1.53–2.22)
Hyperlipidemia	40.4 (37.6–43.3)	1.47 (1.23–1.76)

CI, confidence interval

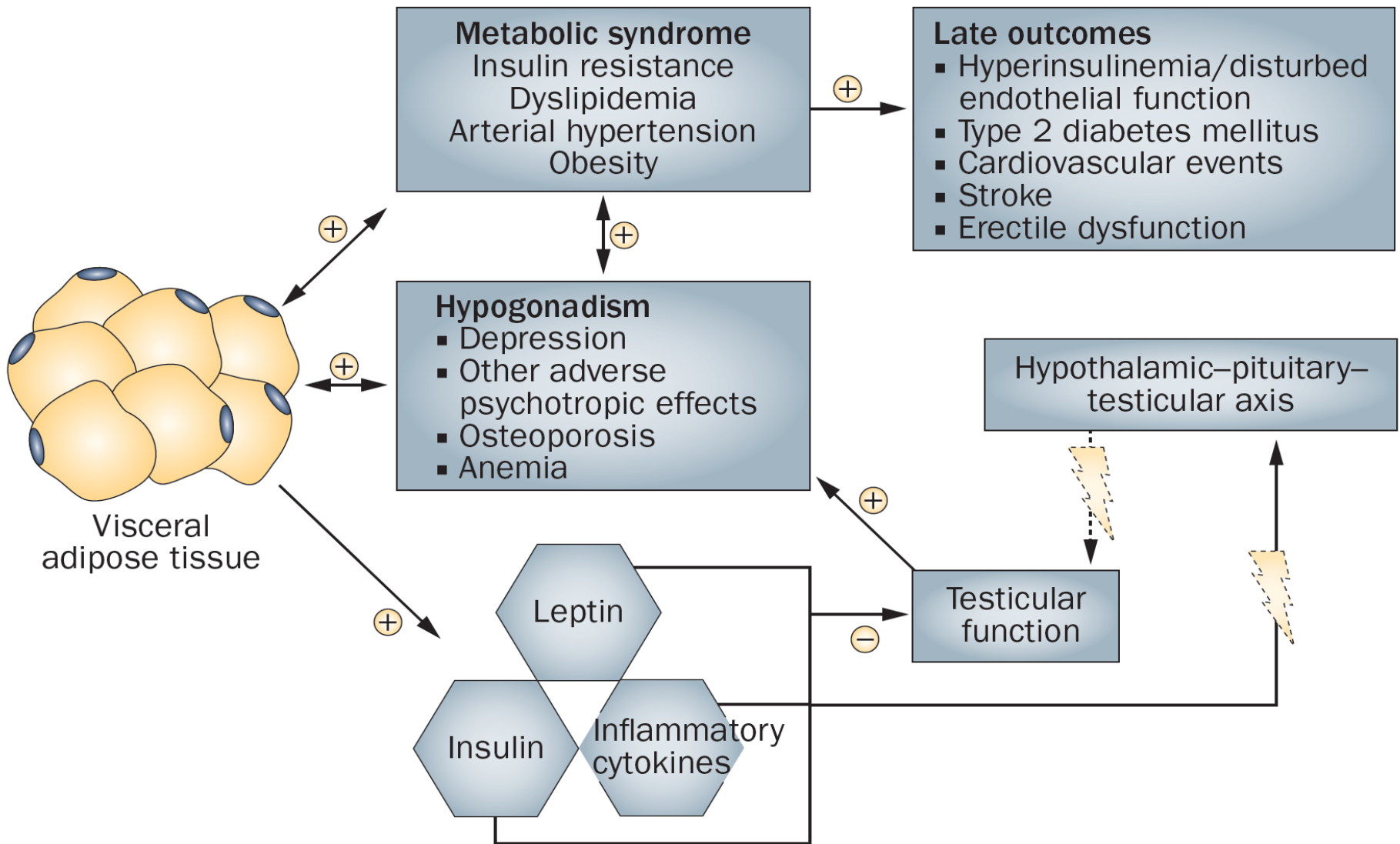
Testosterone levels and symptoms



Total T levels decrease with increasing number of metabolic syndrome components



A self-perpetuating pathogenic cycle



SO HOW DO WE TREAT?



Testosterone replacement analysed

- We've seen that low testosterone is associated with a broad range of physical, psychological and sexual symptoms
- Treating with testosterone would seem like a logical step, but is this effective?



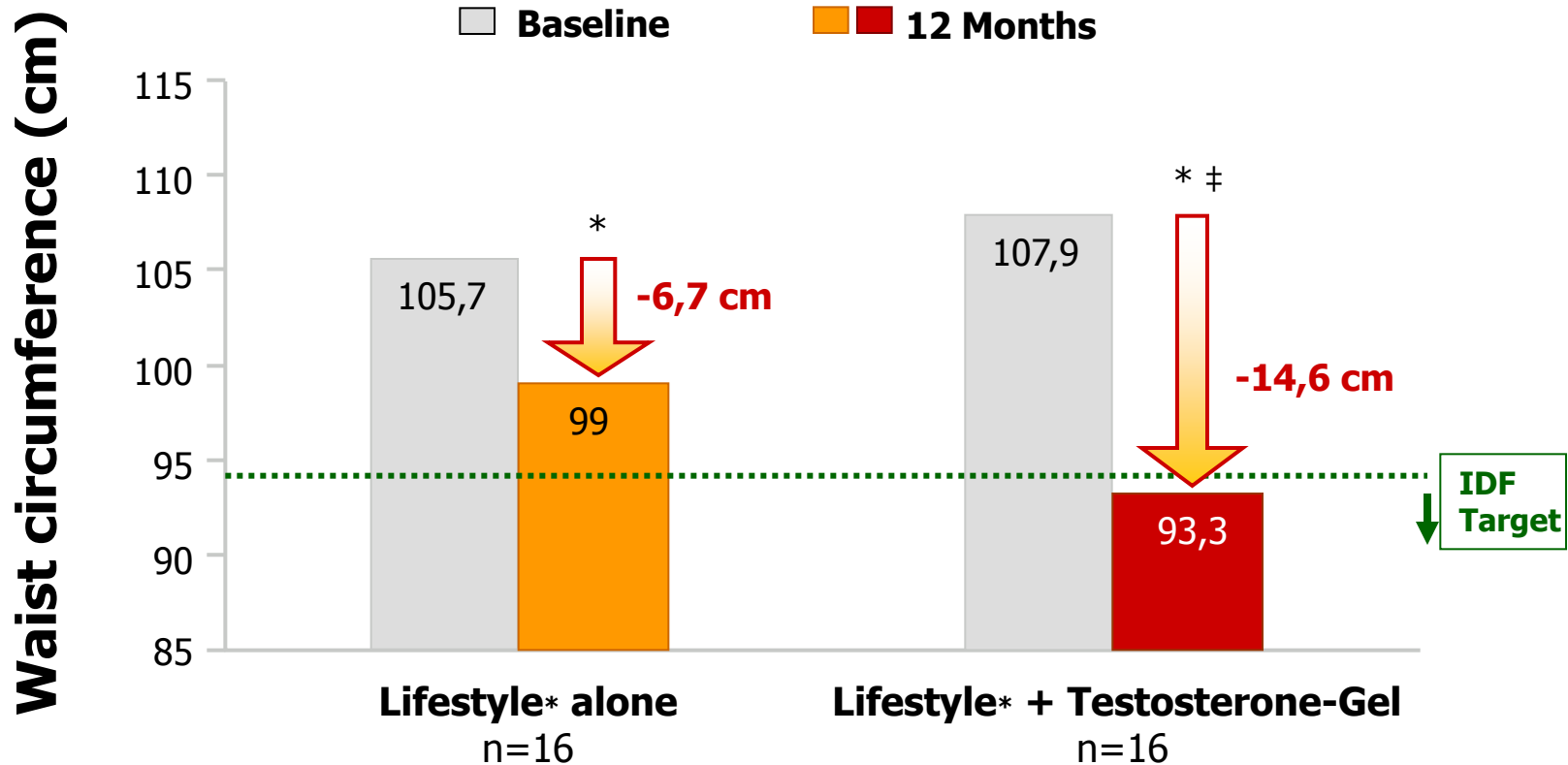
Testosterone effects on...

...Visceral Fat, Waist Circumference

- Lipids
- Insulin Resistance, Glucose Levels

Influence of testosterone and lifestyle (nutrition/sport) on waist circumference in DM Type 2

32 newly diagnosed men with DM Type 2 (35-70 Years)



Testosterone-Gel (Testogel®) 50 mg/d;

*Lifestyle = per Week 3x 30 min Walking + 3x 15 min muscle training; Calory- und Carbo-reduced nutrition); no other medication for DM Type 2

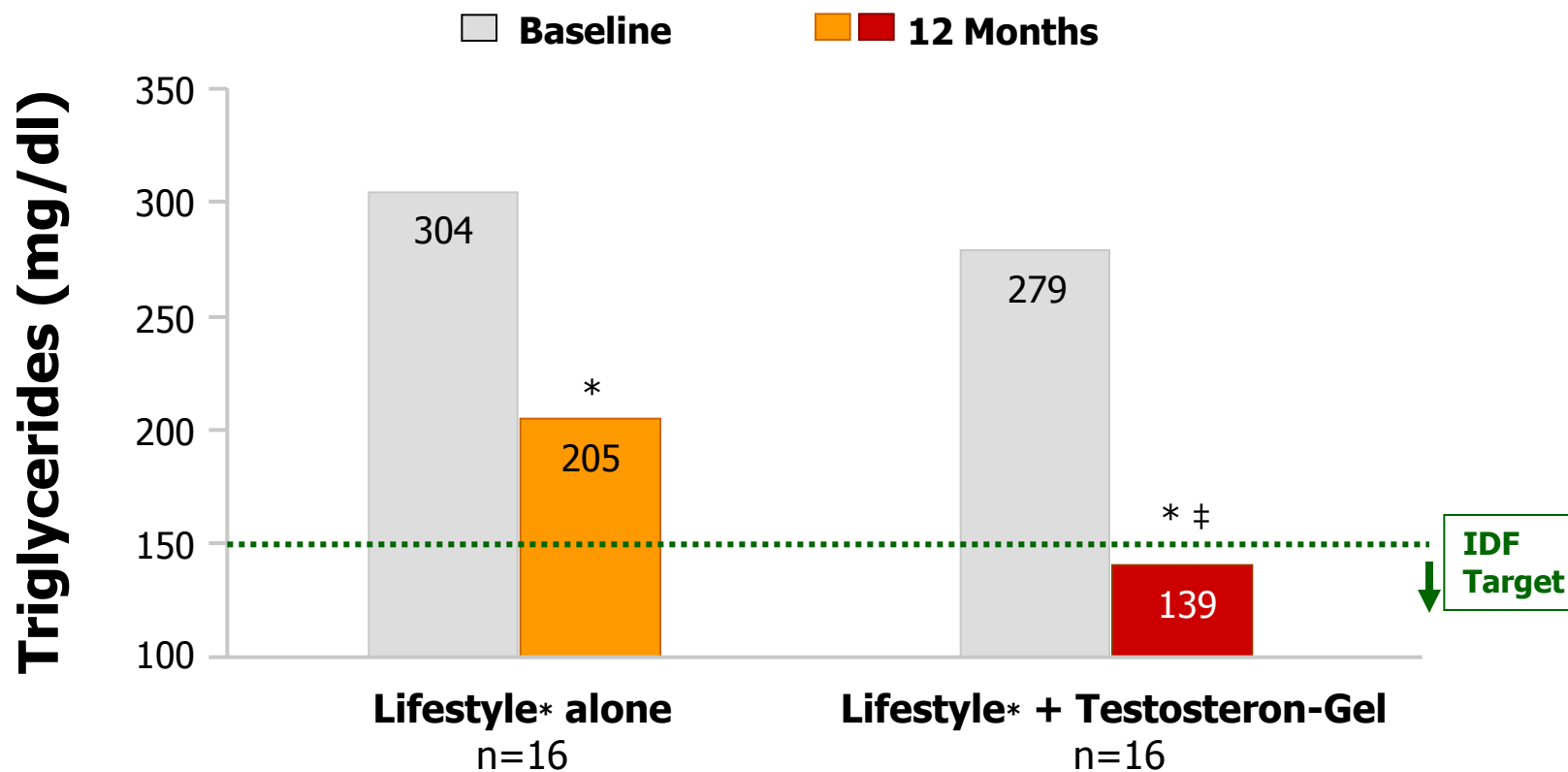
Testosterone effects on...

- Visceral Fat, Waist Circumference

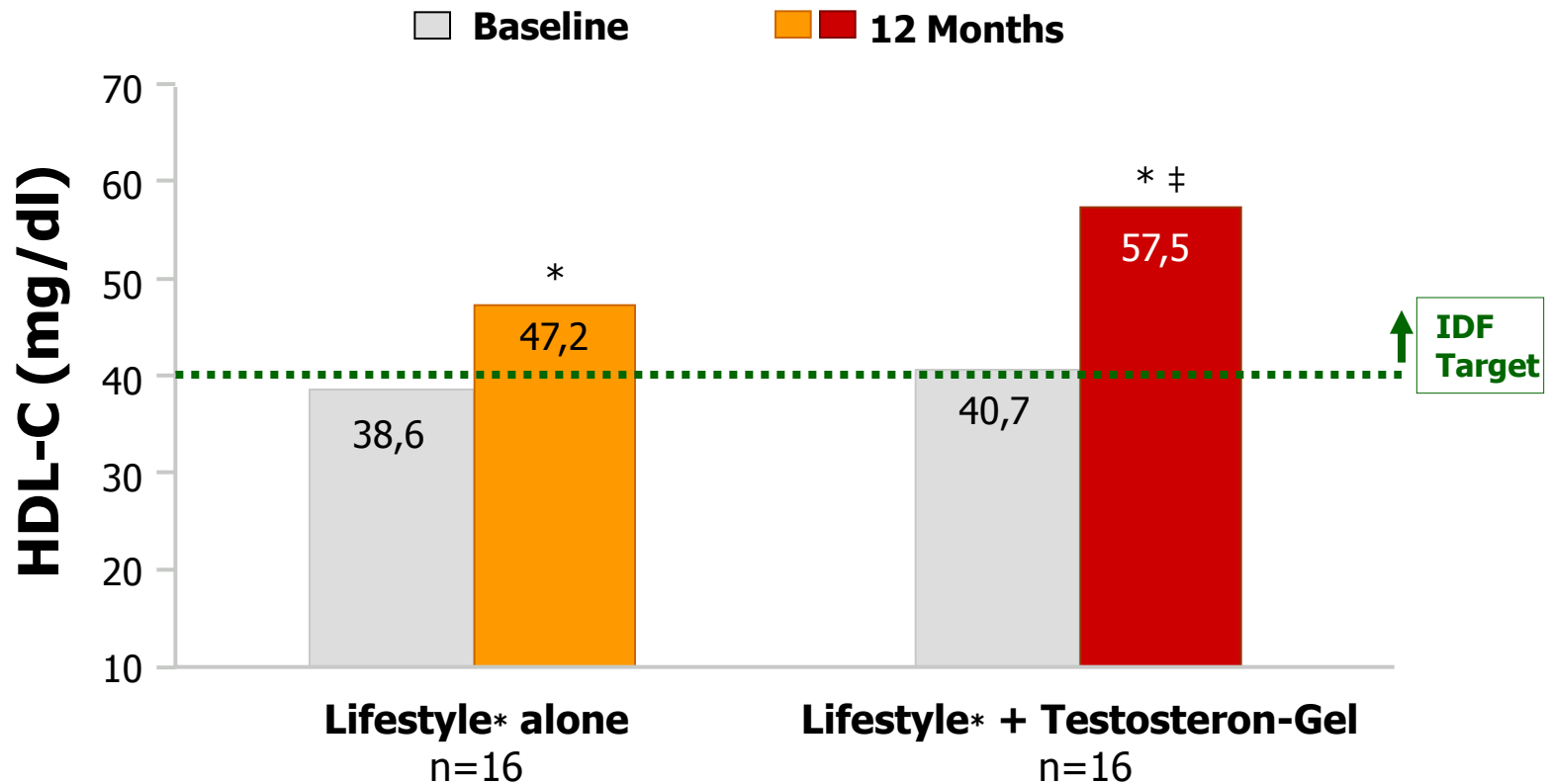
 **Lipids**

- Insulin Resistance, Glucose Levels

Influence of testosterone and lifestyle (nutrition/sport) on waist circumference in DM Type 2



Influence of testosterone and lifestyle (nutrition/sport) on waist circumference in DM Type 2

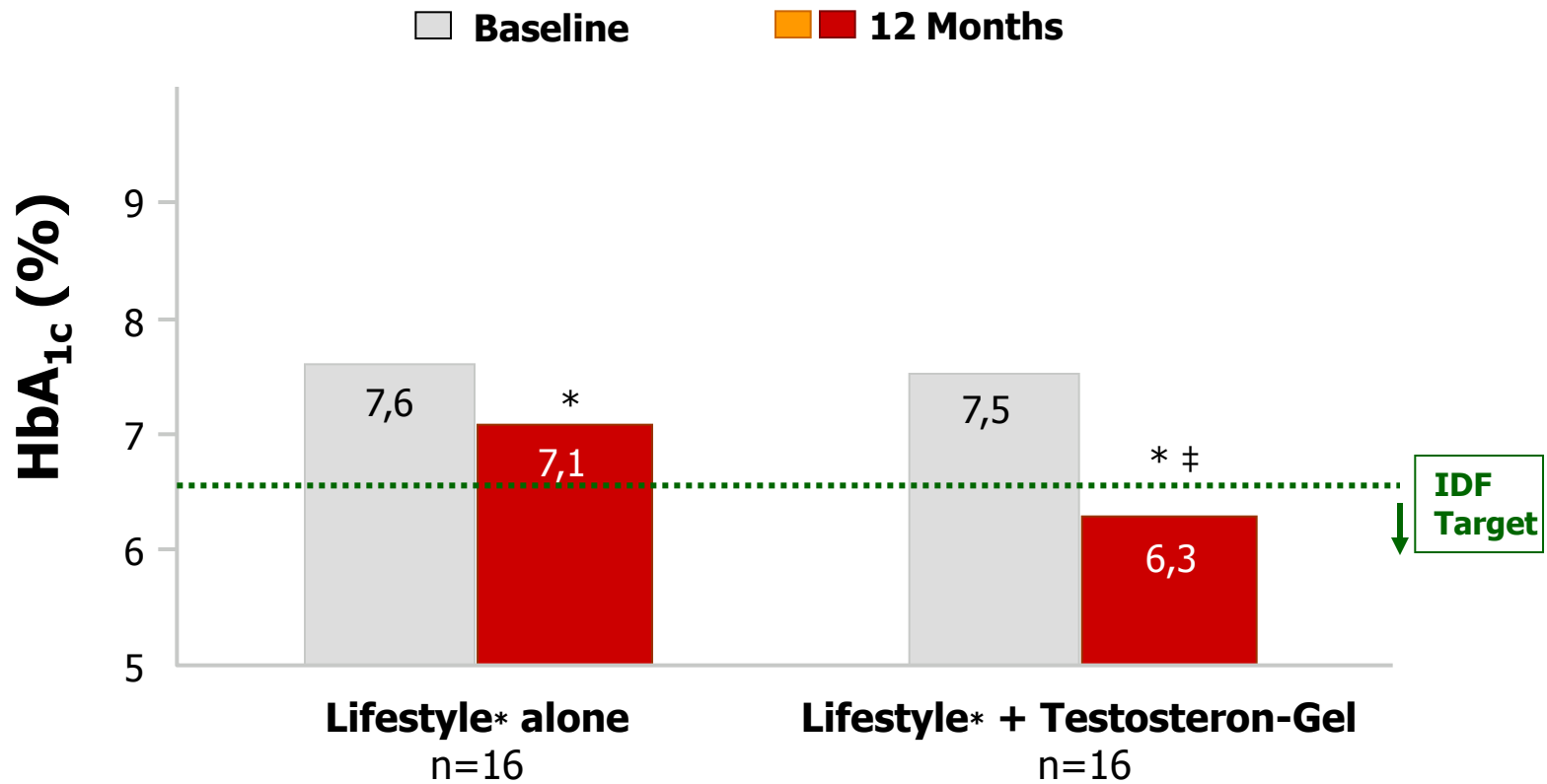


Testosterone effects on...

- Visceral Fat, Waist Circumference
- Lipids

 **Insulin Resistance, Glucose Levels**

Influence of testosterone and lifestyle (nutrition/sport) on waist circumference in DM Type 2



INTRODUCING NEBIDO®



Introducing Nebido®

- Nebido® is the only long-acting testosterone injection providing physiological testosterone levels with only 4-5 injections per year, meaning minimum disruption to men's lives
- Long-term trials haven't been rare in TDS but are required to determine the health benefits of testosterone therapy....



**SINGLE-CENTER,
OBSERVATIONAL
VERY LONG TERM STUDY**

Long-term experience with NEBIDO® - 12.4 years of continuous treatment

227 hypogonadal men

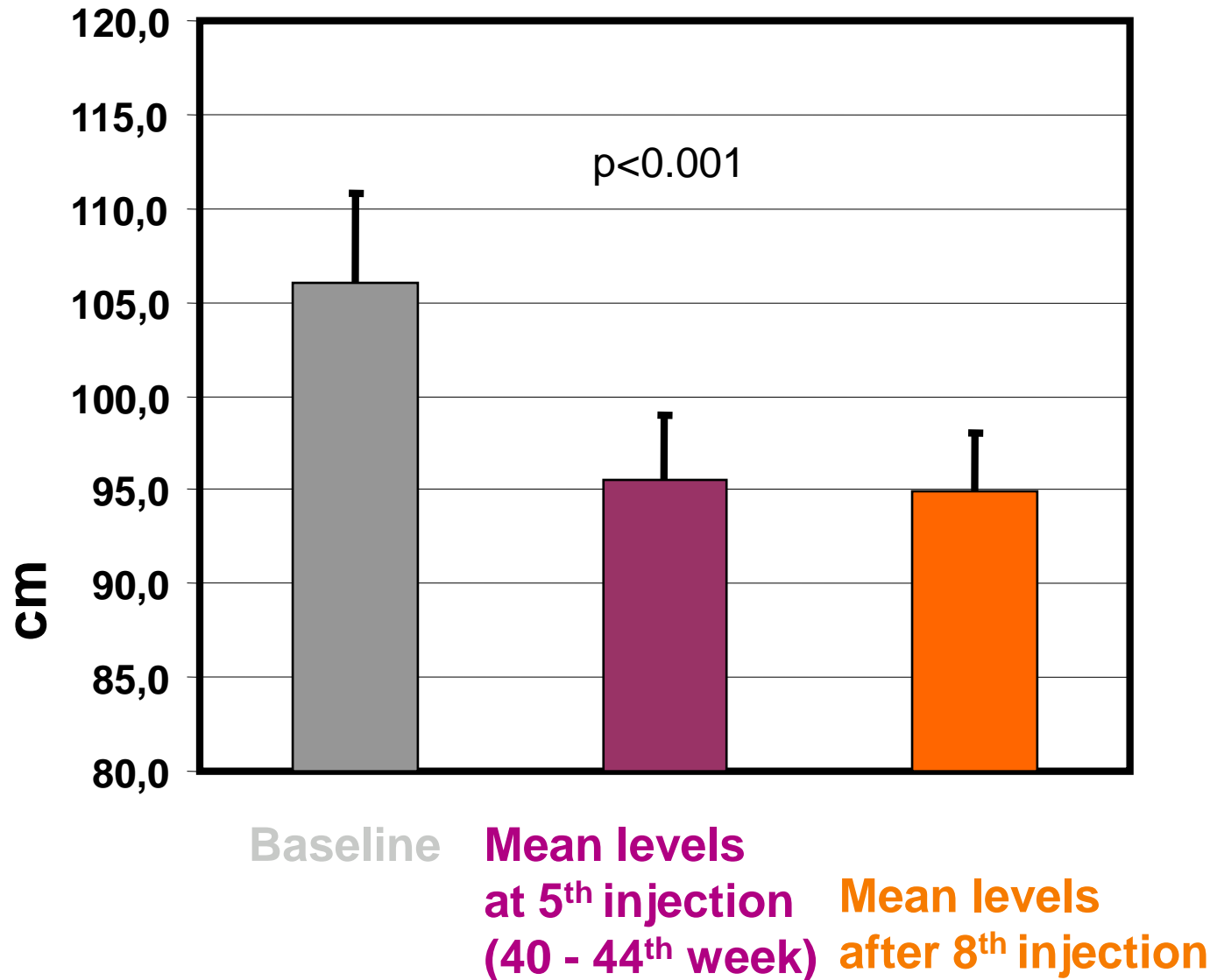
3692 injections

Age 38 ± 12 years (range 15-71)

Causes of hypogonadism:

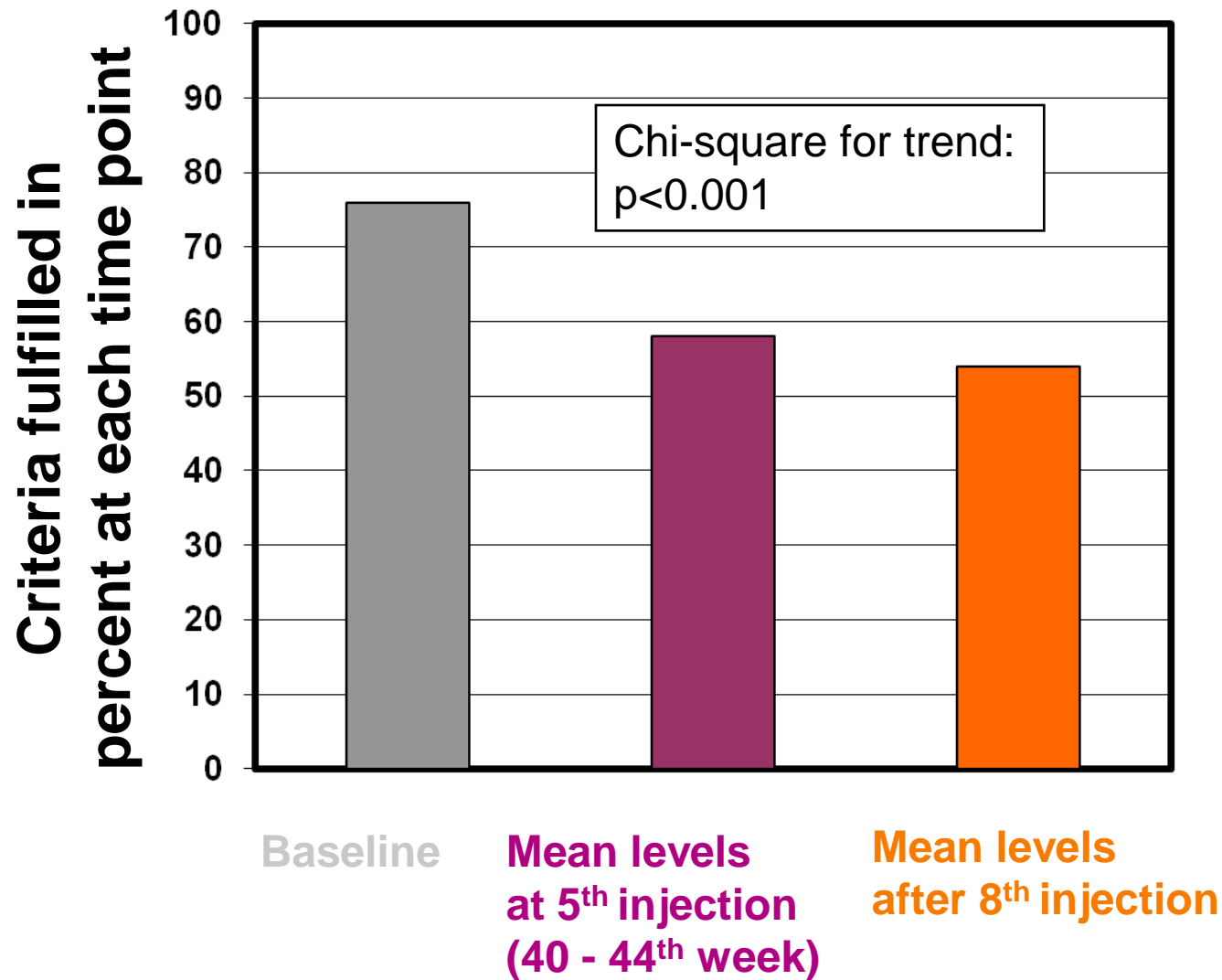
Primary:	n = 117
Secondary:	n = 79
Late-onset (mixed hypogonadism):	n = 31

Effect on waist circumference



n = 162 men
(age > 40 years)
1892 inj.

Effect on metabolic syndrome (IDF)



n = 130 men
(age > 40 years)
923 inj. of TU

INTERNATIONAL, LARGE- SCALE, OBSERVATIONAL STUDY

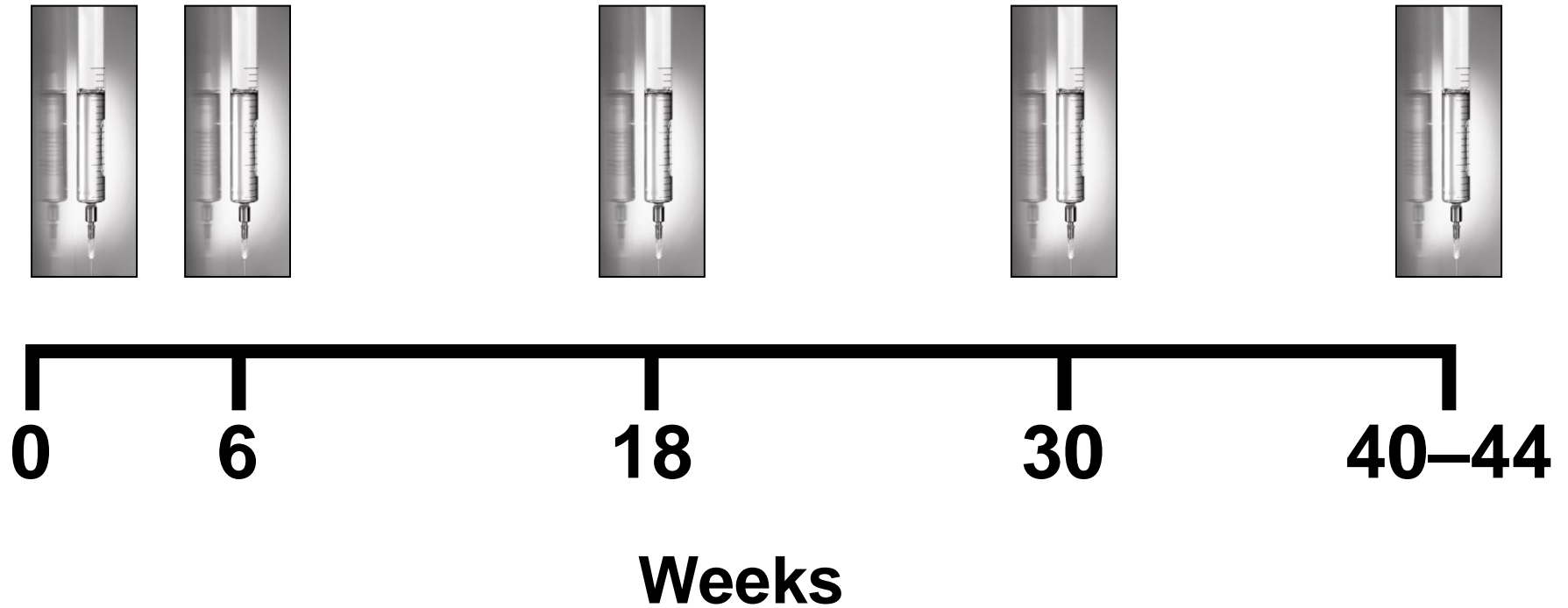


The IPASS study

- An ongoing study of the tolerability and effectiveness of injectable testosterone undecanoate for the treatment of hypogonadism
- Involves more than 1,000 men worldwide



Initial dosing scheme for IPASS



Australia

United Kingdom

Austria

Ukraine

Bulgaria

Thailand

Columbia

Taiwan

**Czech
Republic**

Singapore

Germany

Saudi Arabia

Hong Kong

**Russian
Federation**

Indonesia

Romania

Italy

Philippines

Kazakhstan

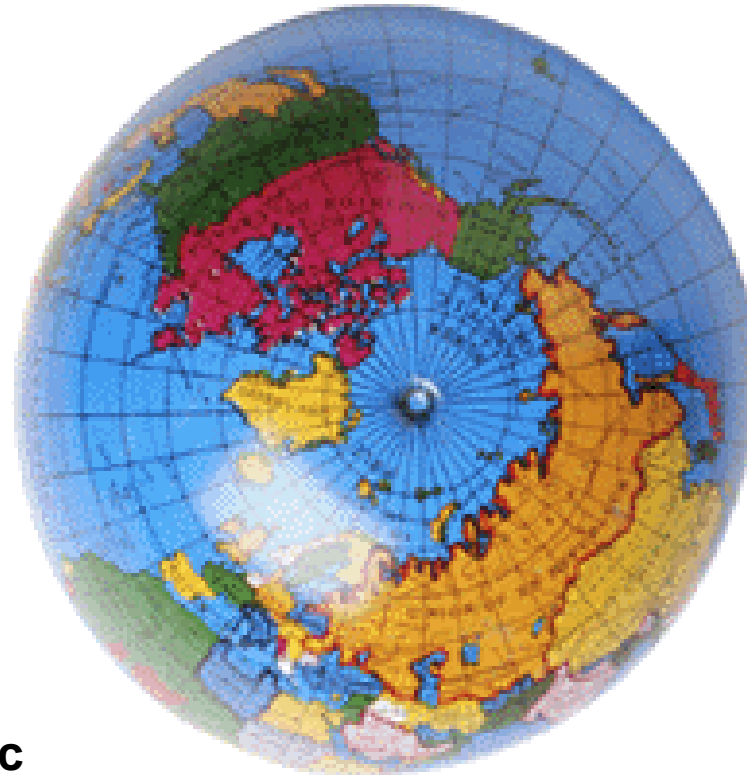
Moldova

**Republic
of Korea**

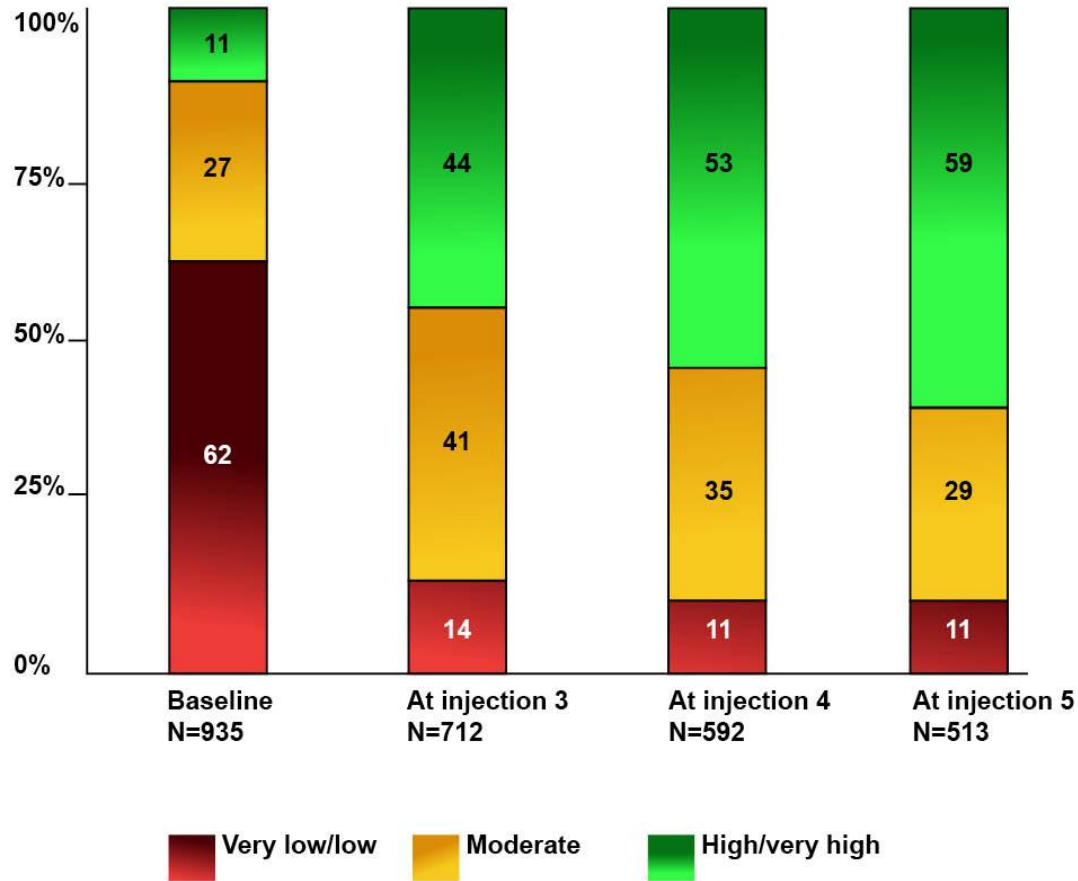
Mexico

Macedonia

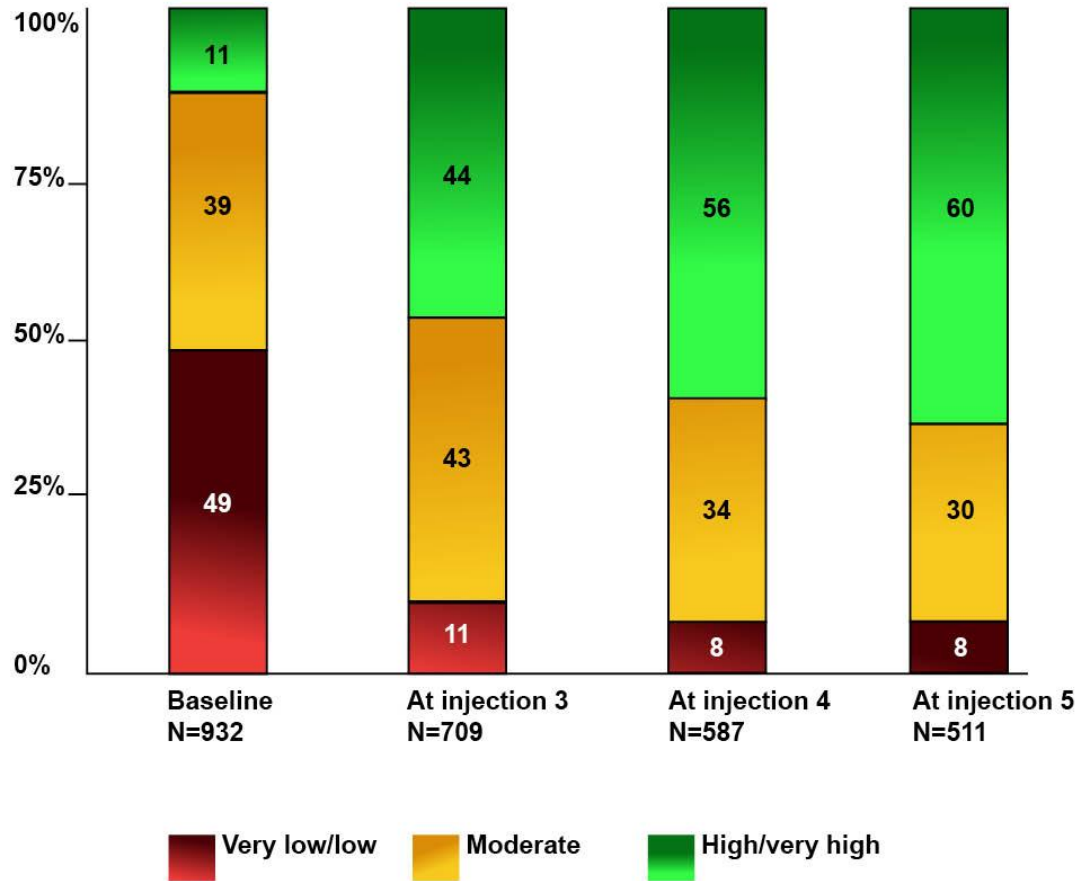
Malaysia



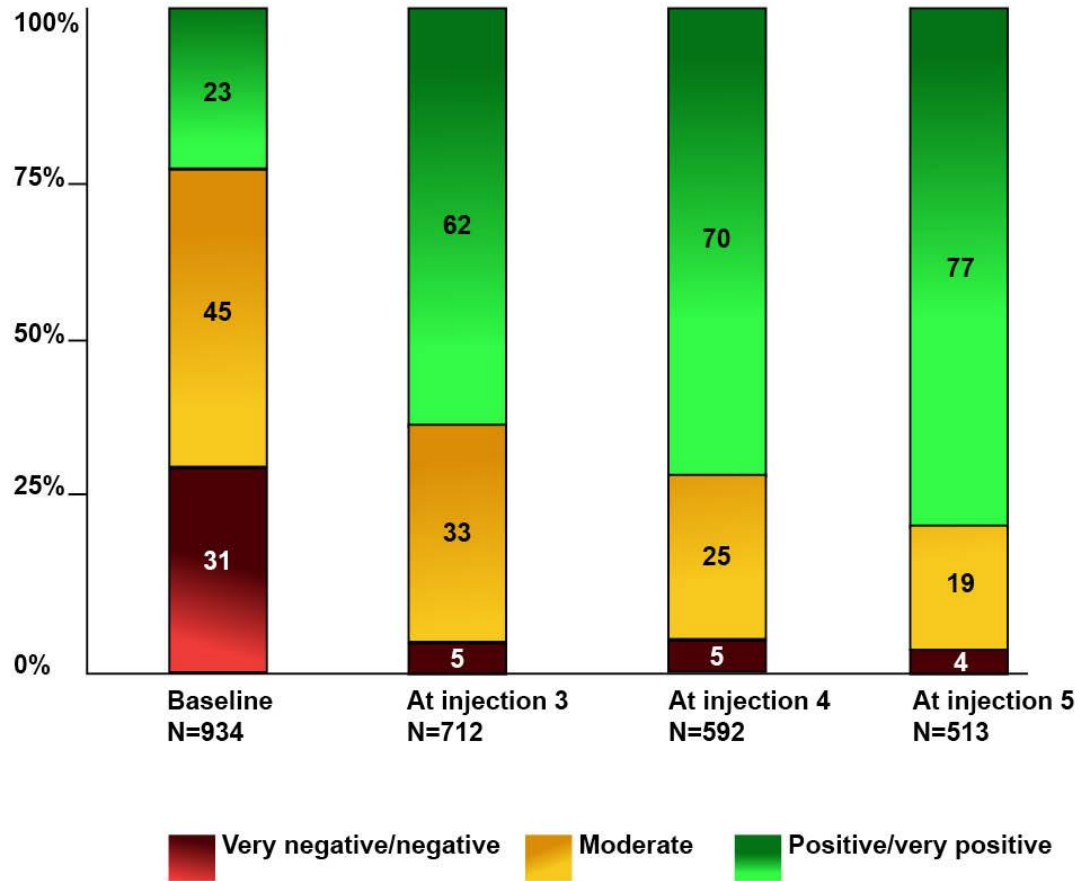
TU improves overall level of sexual desire/libido in hypogonadal men



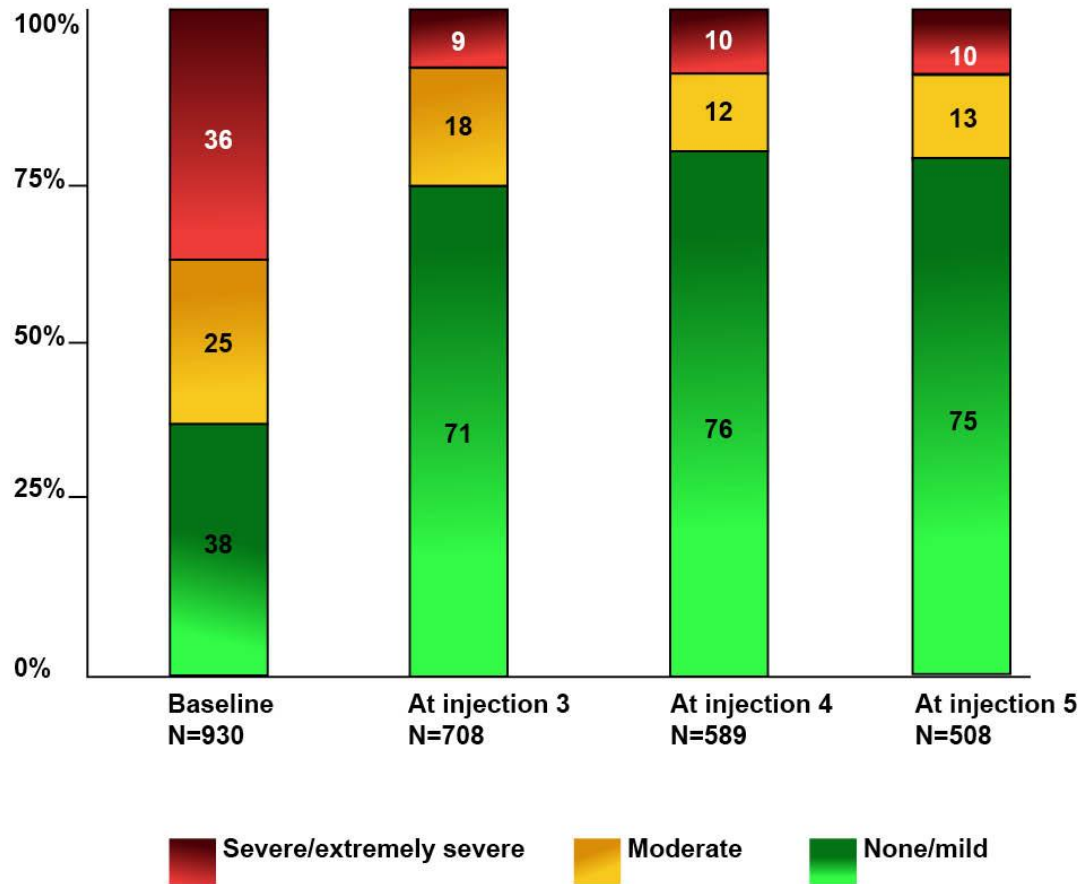
TU improves overall level of vigour/vitality in hypogonadal men



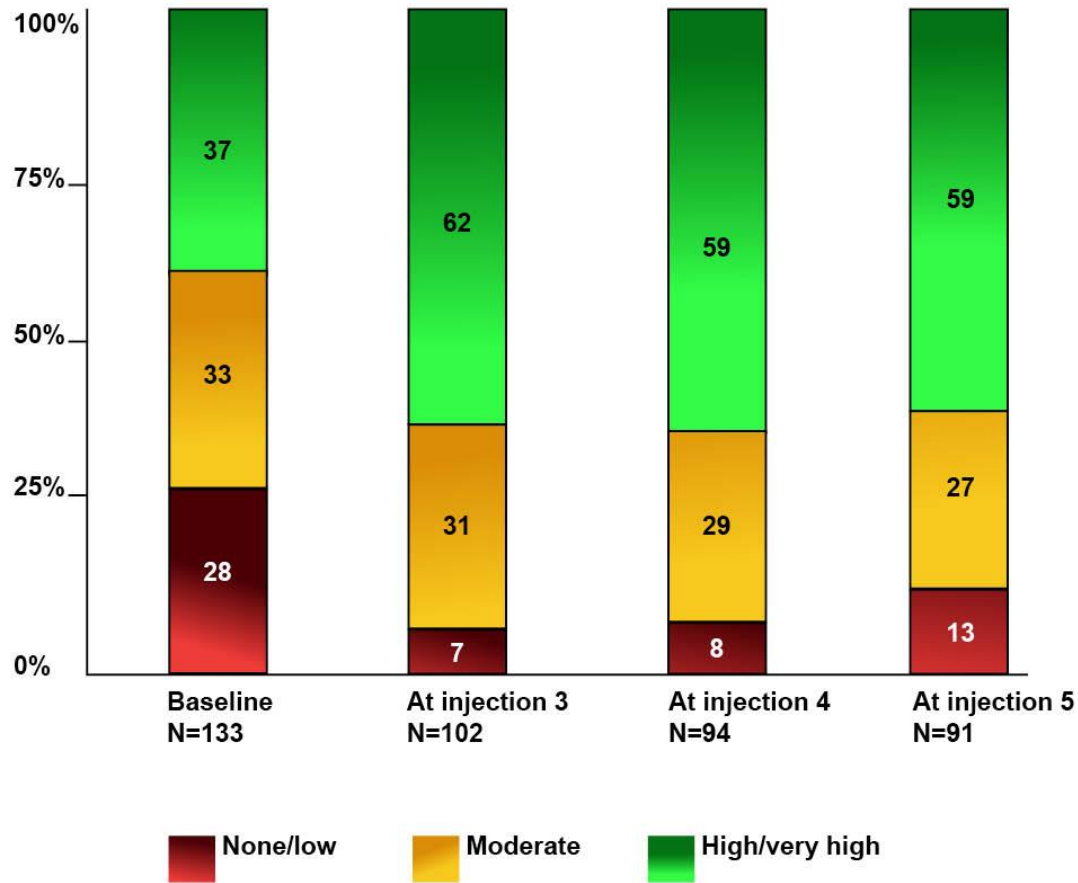
TU improves overall level of mood in hypogonadal men



TU therapy was associated with a decrease in severity of ED in hypogonadal men

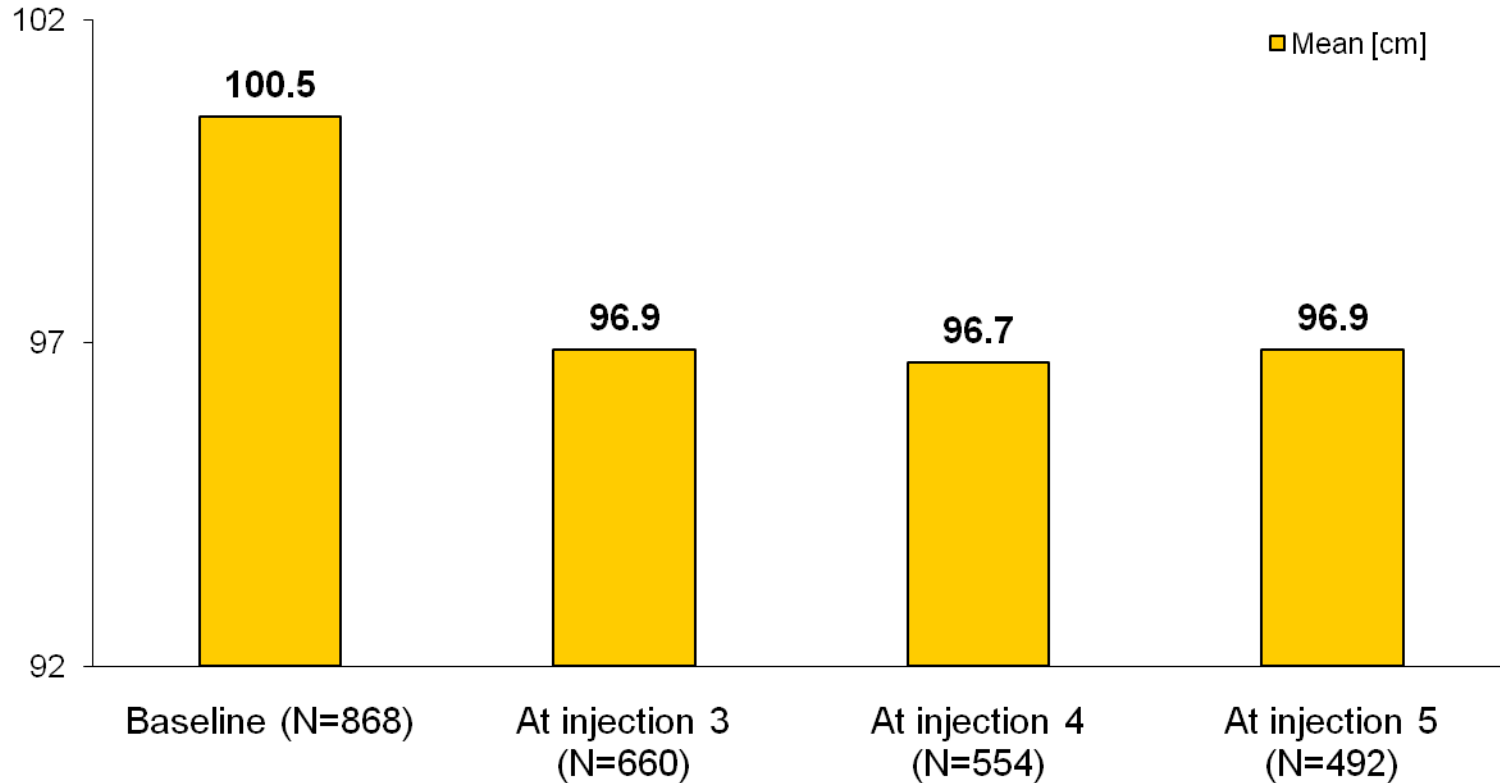


TU improves response to PDE-5 inhibitor therapy in hypogonadal men



TU was associated with decrease in visceral fat

Waist circumference [cm]





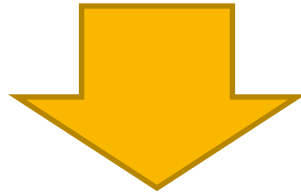
CONCLUSIONS



Treating with testosterone: the right approach

Testosterone deficiency syndrome is widespread and associated with a broad range of physical, psychological and sexual symptoms

Although rare, long-term trials in TDS have shown the significant impact of testosterone therapy on all parameters of metabolic syndrome



Too many men are left alone with their problem of TDS
Treatment with Testosterone is safe and effective