**International Expert Consensus Statement on Male Testosterone Deficiency**

To address concerns regarding male testosterone deficiency (TD) as a recognized medical condition, and its treatment with testosterone (T) therapy, an international expert consensus conference was convened in Prague, Czech Republic, on October 1, 2015. Experts included a broad range of medical specialties including urology, endocrinology, diabetology, internal medicine, and basic science research. Nine resolutions were debated, with unanimous approval. The resolutions and expert comments are shown in the table below.

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**Resolutions of the 2015 International Expert Consensus Conference on Male Testosterone Deficiency (TD) and Its Treatment**

| **Resolutions** | **Expert Comments** |
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| 1. TD is a well-established, significant medical condition that negatively affects male sexuality, reproduction, general health, and quality of life. | TD (low levels of testosterone):* May predict increased risk of developing diabetes, metabolic syndrome.
* Contributes to decreased bone mineral density.
* Is associated with increased all-cause and cardiovascular mortality.
* Negatively impacts general health and quality of life.
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| 2. The symptoms and signs of TD occur as a result of low levels of T and may benefit from treatment regardless of whether there is an identified underlying etiology. | * Symptoms and signs of TD occur in healthy volunteers or patients who undergo androgen deprivation; these symptoms and signs resolve with T normalization.
* Historically recognized causes of TD are rare (eg, anorchia, craniopharyngioma, pituitary tumor), recently termed *classical hypogonadism.* These conditions account for only a tiny fraction of men with TD.
* No evidence exists to support restriction of T therapy only to men with known underlying etiology.
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| 3. TD is a global public health concern. | * Prevalence rates in men range from 2% to 38% in studies from Asia, Europe, North America, and South America.
* Variation in prevalence rates can be explained by differences in the operative definition of TD and biochemical thresholds.
* A US study estimates an additional $190-$525 billion in health care expenditures over 20 years due to TD.
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| 4. T therapy for men with TD is effective, rational, and evidence based. | High-level evidence shows T therapy effectively:* Increases sexual desire (libido) and erectile and orgasmic function.
* Increases lean body mass.
* Decreases fat mass.
* Improves bone mineral density.
* Improves in mood and energy level.
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| 5. There is no T concentration threshold that reliably distinguishes those who will respond to treatment from those who will not respond to treatment. | No study has revealed a single testosterone threshold that reliably separates those who experience signs and symptoms of TD from those who do not, nor who will likely respond to treatment. Interpretation of total T concentrations is confounded by inter-individual variation. Free (unbound) T can be a useful indicator of androgen status. |
| 6. There is no scientific basis for any age-specific recommendations against the use of T therapy in men. | * The term *age-related hypogonadism* is of questionable validity since the decline in mean serum T level with age is minor and primarily attributable to comorbidities, especially obesity.
* Older men respond well to T therapy, as do younger men.
* Increased risk of erythrocytosis (elevated red blood cell count) in older men requires monitoring but does not merit withholding T therapy if indicated.
* It is illogical to single out TD as the one medical condition among many (eg, diabetes, hypertension, heart disease, cancer, arthritis) that does not merit treatment because it becomes more prevalent with age.
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| 7. The evidence does not support increased risks of cardiovascular events (heart attack, stroke) with T therapy. | * Two observational studies received intense media attention after reporting increased cardiovascular risks. Both had major flaws/limitations. One misreported results, the other had no control group.
* Low serum T is associated with increased atherosclerosis, coronary artery disease, obesity, diabetes, and mortality.
* Several randomized controlled trials in men with known heart disease (angina, heart failure) showed greater benefits with T vs placebo (greater time to ischemia, greater exercise capacity).
* The largest meta-analysis showed no increased risk with T therapy; *reduced* risk was noted in men with metabolic conditions.
* No increased risk of venothrombotic events with T therapy.
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| 8. The evidence does not support increased risk of prostate cancer with T therapy. | * Serum androgen concentrations are not associated with increased risk of prostate cancer nor aggressive disease.
* T therapy has no greater risk of prostate cancer than placebo.
* Aggressive/high-grade prostate cancer is associated with *low* serum T levels.
* Data suggest no increased risk of recurrence/progression with T therapy in men previously treated for prostate cancer.
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| 9. The evidence supports a major research initiative to explore possible benefits of T therapy for cardio-metabolic disease, including diabetes. | * A large body of evidence suggests lower serum T concentrations are associated with increased cardiovascular risk; higher levels are protective.
* T therapy reliably increases lean body mass, decreases fat mass, and may improve glycemic control (reduce risk of diabetes).
* Mortality rates are reduced by half in men with TD who received T therapy compared with untreated men in observational studies.
* Among men who received T therapy, those with normalized T levels had a reduced rate of cardiovascular events/mortality compared to men with persistently low T.
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