

# Evidence for the Integration of Total and Free Testosterone in Management of Prostate Cancer

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# Introduction

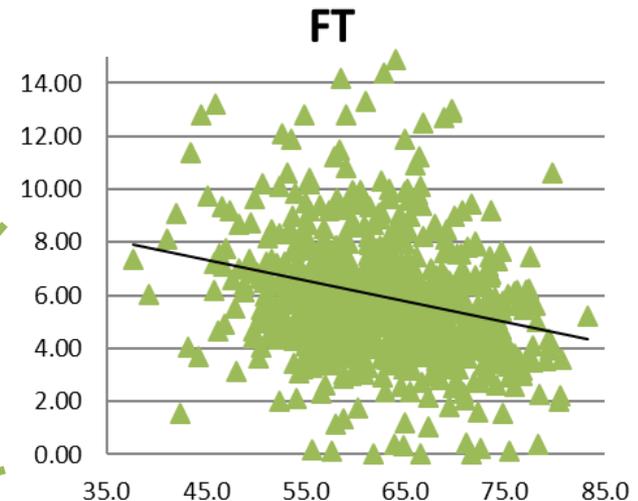
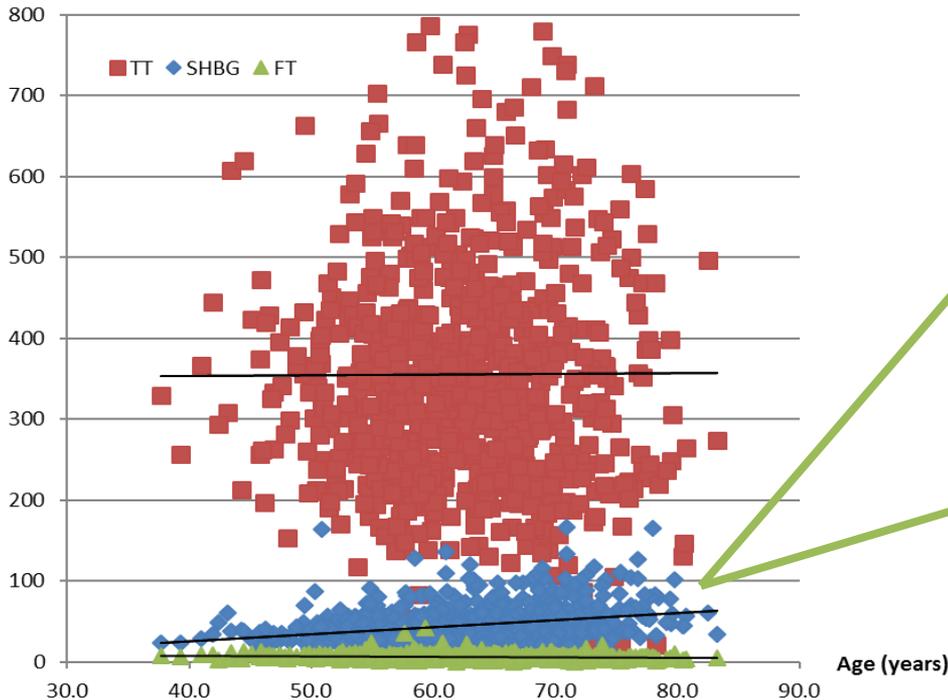
- Since the 1966 Nobel Prize in Medicine awarded to Huggins and Hodges, the relationship between prostate cancer and testosterone remains highly controversial and not completely understood.
- Consequently, there has been a historic fear of high serum testosterone, a hesitance towards testosterone supplementation, and resultant lack of systematized screening.

## Materials and Methods

- 830 RP patients had prospectively-drawn total testosterone (TT), sex hormone binding globulin (SHBG), and calculated free testosterone (cFT).
- Impact of age on TT, SHBG, and cFT was assessed with linear regression.
- Correlation of patients with low cFT with adverse oncologic characteristics (i.e. GGG 9-10 or pT3/T4) was assessed with logistic regression and ROC curves.

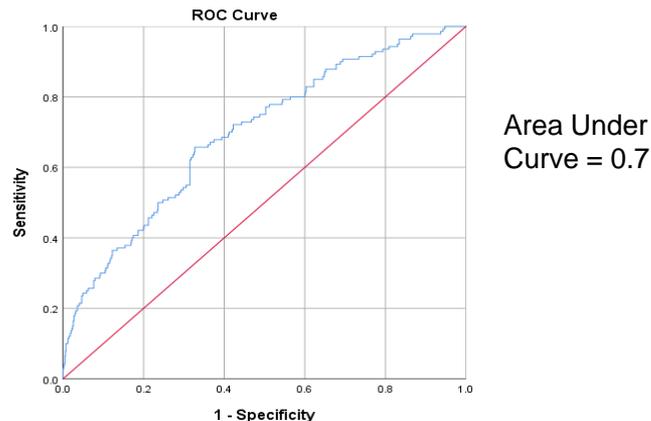
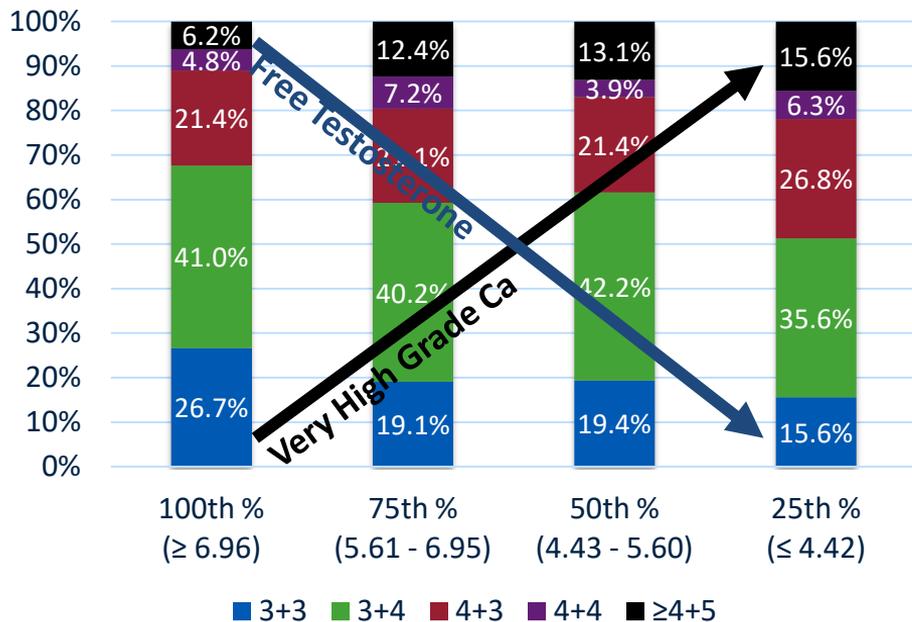
# Results – Effects of Age on Androgen Levels

- As men aged, total testosterone was stable and SHBG increased. In tandem, cFT decreased approximately 50% as men aged from 30s to 80s.



# Results – Effects of Endogenous cFT on Disease Characteristics

- Each quartile of cFT decrease resulted in an increase in GGG 9-10 disease.



- Same trends in pT3/T4, seminal vesicle invasion, and lymph node involvement.

# Conclusion

- Low cFT is a risk factor for high grade and stage PC.
- These results have implications for the current recommendations for prostate cancer risk analysis and stratification.
- Free and total testosterone levels should be assessed in all men with prostate cancer.