



Metabolic Syndrome and Objective Prostate Parameters

Systematic review and meta-analysis of PSA and prostate volume

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KEY FINDING

MetS was associated with larger PV. The PSA association was less robust after bias adjustment.

STUDY

Systematic review • Meta-analysis

Abstract #372

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Hypothesis / aims

Assess the association of MetS with PSA and PV.

Study design & methods

- Databases: 5 major sources; inception–2024
- Design: Cross-sectional studies
- Quality: JBI checklist
- Certainty: GRADE
- Synthesis: Random-effects SMD (95% CI)

Results

11,174

records

30

PSA studies

23

PV studies

Outcome

PSA, random-effects
30 studies • GRADE very low

PSA, trim-and-fill adjusted
Egger's test $p = 0.046$

Prostate volume, random-effects
23 studies • GRADE low

SMD (95% CI)

0.16 (0.03–0.29)

0.036 (CI not reported)

0.29 (0.12–0.46)



Standardized mean difference (MetS vs no MetS)

Main findings

PSA

SMD 0.16

$p=0.01$

Prostate volume

SMD 0.29

$p<0.001$

PSA: publication bias

Egger $p=0.046$ • Trim-and-fill SMD 0.036

Interpretation

PV association was stronger and more consistent than PSA.

Possible pathways: inflammation, insulin resistance, hormonal dysregulation.

Cross-sectional evidence → no causal inference.

Certainty & conclusion

PSA: Very low

PV: Low

MetS was associated with larger PV and modestly higher PSA. Interpret PSA cautiously.

Funding: No funding • Clinical trial: No • Subjects: None • AI: simple textual assistance