

PROSPERO PROTOCOL TEMPLATE

Review title (13/50 words)
Effectiveness and Safety of Saw Palmetto as a Dietary Supplement: A Systematic Review.
Anticipated/actual start date and anticipated end date
Start date: 9th June 2025 End date: 26th August 2025
Review Question (21/250 words)
What is the current evidence on the effectiveness and safety of Saw Palmetto as a dietary supplement?
Searches (80/300 words)
<ul style="list-style-type: none">• Search strategies will be developed specifically for this systematic review, using a combination of controlled vocabulary (e.g., MeSH and Emtree) and free-text terms related to Saw Palmetto (<i>Serenoa repens</i>).• The search will be conducted on the following databases:<ol style="list-style-type: none">1. PubMed (MEDLINE)2. Embase3. CENTRAL (Cochrane Central Register of Controlled Trials)• No date restrictions will be applied. Searches will include all relevant studies published in English from inception to June 2025.
Search Strategy (120/300 words)
A comprehensive search strategy was applied in MEDLINE (Ovid) , Embase (Ovid) , and CENTRAL (Cochrane Central Register of Controlled Trials) using both controlled vocabulary (e.g., MeSH, Emtree) and free-text terms . The core terms include: <ul style="list-style-type: none">• "Saw Palmetto" OR "Serenoa repens" OR "Saw Palmetto extract" No population terms or condition-specific filters (e.g., BPH, dietary supplements, treatment outcomes) were used. Searches were limited to English-language publications only. Conference abstracts were excluded. No restriction on publication date was applied. All retrieved citations were exported to reference management software. Duplicates were removed, and the final list was prepared for title and abstract screening. All search activity was documented in a shared folder.
Condition/domain being studied (67/200 words)
Saw Palmetto (<i>Serenoa repens</i>) is a botanical supplement used globally for various health purposes, including urinary symptoms, hair loss, and hormone-related conditions. Its use spans clinical and community settings, but the evidence for its effectiveness and safety varies depending on formulation, dosage, and study design. This systematic review will evaluate the broad clinical evidence available for Saw Palmetto supplementation.
Study population (24/200 words)
Studies involving human participants of any age or gender will be included, with no restrictions based on health status or clinical indication.
Intervention/ exposure (20/200 words)
All studies that investigate the use of Saw Palmetto for any clinical or health-related purpose will be eligible for inclusion.

Comparator/ control (75/200 words)

Eligible studies may compare Saw Palmetto to one or more of the following:

- Placebo (inert treatment used in randomized controlled trials)
- No treatment or standard care
- Other active intervention

Comparators will be used to assess the relative effectiveness, safety, and tolerability of Saw Palmetto.

Type of study to be included (74/150 words)

This review will include:

- Randomized controlled trials (RCTs)
- Non-randomized comparative studies will be considered if there is not enough evidence from RCTs

The following will be excluded:

- Cohort studies
- Case-control studies
- Cross-sectional studies
- Case series and case reports (even if they report relevant safety or effectiveness data)
- Reviews and meta-analyses
- Editorials and commentaries
- Conference abstracts without full data
- Animal studies
- In vitro (laboratory-based) studies

**Main / Primary Outcome (s) and Measures of effects
(88/300 words)**

This review will assess the **effectiveness and safety** of Saw Palmetto across any health-related use. Primary outcomes may include:

- **Symptom improvement**, measured by:
 - Disease-specific clinical scales (e.g., IPSS, for urinary symptoms)
 - Patient-reported outcomes (e.g., visual analog scales, symptom checklists)
- **Objective clinical outcomes**, such as lab values, flow rates, or biomarkers
- **Adverse effects and safety outcomes**, including:
 - Frequency and severity of side effects
 - Discontinuation due to adverse events

All effect measures will be **described narratively**.

**Additional / Secondary outcome(s) and Measures of effect
(87/300 + 44/300 words)**

Secondary outcomes will support the interpretation of effectiveness and safety. These may include:

- **Quality of life measures**, using validated or study-specific tools
- **Sexual function outcomes**, when applicable (e.g., in prostate-related studies)
- **Changes in hormone levels or biomarkers** (e.g., testosterone, DHT, PSA)
- **Patient satisfaction or perceived benefit**
- **Medication adherence or compliance**
- **Healthcare utilization** (e.g., visits, referrals, additional treatments)

All outcomes will be reported descriptively.

Data extraction (106/300 words)

The following data will be extracted from each included study:

- **Study characteristics:** authors, publication year, country, study design, setting
- **Population details:** sample size, age, sex, health status, indication for Saw Palmetto use
- **Intervention details:** formulation type (e.g., extract, powder), dosage, frequency, duration
- **Comparator details:** placebo, standard treatment, or no treatment (if applicable)
- **Primary and secondary outcomes:** symptom changes, biomarkers, adverse effects, quality of life, etc.
- **Results and effect estimates** means, standard deviations, risk ratios, odds ratios, confidence intervals
- **Funding source** and **conflict of interest** declarations
- **Risk of bias** assessments per study design

All data will be managed using a standardized data extraction form.

Risk of bias/ Quality assessment (191/200 words)

Risks of bias will be assessed using design-specific tools:

- **For randomized controlled trials (RCTs):**
 - The **Cochrane Risk of Bias 2.0 (RoB 2)** tool will be used
 - Domains assessed:
 - Randomization process
 - Deviations from intended interventions
 - Missing outcome data
 - Measurement of the outcome
 - Selection of the reported result
- **For observational studies (cohort, case-control, cross-sectional):**
 - The **Newcastle–Ottawa Scale (NOS)** will be applied
 - NOS domains include:
 - Selection of participants
 - Comparability of study groups
 - Ascertainment of exposure/outcome
- **For case reports and case series:**
 - A simplified tool adapted from the **JBI critical appraisal checklist** will be used
 - Focus on:
 - Clarity of reporting
 - Causality
 - Consistency
- **Process:**
 - Two reviewers will independently assess the risk of bias
 - Disagreements will be resolved through discussion or third-party input
 - Risk of bias scores will be used to inform interpretation of results
 - Sensitivity analyses may be conducted
 - No studies will be excluded solely based on quality rating

Data synthesis plan (135/400 words)

A **narrative synthesis** approach will be used due to the expected heterogeneity in study designs, interventions, and outcomes. The synthesis plan includes:

- **Descriptive summary** of:
 - Study characteristics (e.g., design, population, intervention, comparator)
 - Reported outcomes (effectiveness, safety, quality of life, etc.)
- **Grouping of studies** by:
 - Formulation or dosage of Saw Palmetto
 - Condition or indication (if applicable)
 - Study design and risk of bias level
- **Tabulation** of findings to compare outcomes and patterns
- **Thematic analysis** of qualitative findings where applicable
- **Sensitivity analysis** based on study quality, if enough data is available
- **No meta-analysis** will be conducted due to anticipated variability

All results will be interpreted in light of methodological quality, consistency of findings, and applicability to real-world Saw Palmetto use.

Analysis of subgroups/ subsets (198/250 words)

Where data allow, subgroup and subset analyses will be conducted to explore potential differences in outcomes based on:

- **Formulation type** of Saw Palmetto:
 - Standardized extract vs. crude preparation
- **Dosage**:
 - ≤320 mg/day vs. >320 mg/day
- **Treatment duration**:
 - Short-term (<3 months) vs. long-term (≥3 months)
- **Study design**:
 - RCT vs. observational (cohort, case-control)
- **Population characteristics**:
 - Age group, sex, underlying condition (if reported)
- **Geographical setting**:
 - Region or country (if applicable)

Findings from subgroup analyses will be reported descriptively. No statistical interaction tests will be performed due to expected heterogeneity. Subgroup analysis will support interpretation but not alter study inclusion or exclusion decisions.