



## St. John's wort

### Common Indications:

- Depression
- Calming effects
- Antimicrobial/antiviral
- Topical Application
- Postmenopausal symptoms improvement
- Premenstrual syndrome
- Somatoform disorder
- Neuroendocrine effects

### General Comments:

St. John's wort (*Hypericum perforatum*) is native to Europe, West Asia, and North Africa, and has been naturalized to North and South America and Australia. St. John's wort has been used throughout history. The Greeks and the Romans documented its medicinal use in the treatment of nerve-related disorders. St. John's wort has been extensively studied in Europe over the last two decades, with more recent research in the United States. St. John's wort (SJW) is the most commonly prescribed antidepressant in Germany. In 1984, the German Commission E designated St. John's wort as an approved herb, and the safety and effectiveness of St. John's wort are reevaluated periodically.

### Benefits & Mechanism of action:

#### Depression

Several published trials and meta-analyses have demonstrated the efficacy and tolerability of St. John's wort extract for mild to moderate depression<sup>9,10,11,12,13</sup>. Comparative trials of St. John's wort extract and other antidepressants, including selective serotonin reuptake inhibitors (SSRIs), provide support for the herb's efficacy<sup>4,5</sup>. St. John's wort extracts have been shown to be significantly more effective than placebo with at least similar efficacy and better tolerability compared to standard antidepressant drugs<sup>3,6,12</sup>. A 2012 26-week study in 124 patients reported St. John's wort extract had similar efficacy as sertraline (Zoloft) in treating major depressive disorder<sup>15</sup>.

#### Neuroendocrine Effects

Studies have found that St. John's wort acts via inhibition of the reuptake of serotonin, dopamine, and noradrenaline, along with activation of gamma-aminobutyrate and glutamate receptors. *In vivo* studies have reported that St. John's wort extract leads to a downregulation of beta-adrenergic receptors and an upregulation of serotonin 5-HT<sub>2</sub> receptors in the rat frontal cortex and causes changes in neurotransmitter concentrations in brain areas that are implicated in depression. Recent neuroendocrine studies suggest that St John's wort is involved in hypothalamic-pituitary-adrenal axis function, improving immune, oxidative stress defense and neuroendocrine function<sup>37</sup>. The antidepressant activity of St. John's wort is attributable to the naphthodianthrone hypericin, the phloroglucinol derivative hyperforin and several flavonoids.

### Calming Effects

St John's wort has shown some activities at GABA receptors and likely to have anxiolytic effects. A study compared SJW and diazepam and found that SJW was significantly better than diazepam in improving moderate to severe anxiety<sup>43</sup>. Another study reported that SJW improved nervous agitation in children in combination with valerian root and passionflower root dry extract.<sup>42</sup>

### Antimicrobial/antiviral

In general, St John's wort has been known for its antimicrobial/antiviral activities *in vitro* and *in vivo* studies<sup>40,41</sup>. One study has found that SJW reduced the frequency and severity of episodes of recurrent herpes<sup>39</sup>.

### Topical Application

Many literatures have shown the effectiveness of SJW in various topical diseases such as atopic dermatitis, herpes simplex, burns, psoriasis, caesarean section scar, and scar wounds<sup>46,47</sup>.

### Somatoform disorder

2 trials have shown that SJW helped to significantly improve the symptoms of somatoform disorder<sup>44,45</sup>.

### Postmenopausal symptoms improvement

Many studies have reported the effect of SJW in menopausal symptoms such as psychological changes, mental instability, and vasomotor symptoms<sup>48,49</sup>. SJW was also studied in combination with other herbs to relieve the aforementioned symptoms in many trials<sup>50,51,52</sup>.

### Premenstrual syndrome

Several studies have shown the effectiveness of SJW in managing premenstrual syndrome<sup>54,55,56</sup>. One systematic review in 2009 also found the same conclusion<sup>53</sup>.

### Dose:

600mg to 1800 mg daily in divided dose of a standardized extract<sup>35,36</sup>.

\*Note: There are various products with different dosages and standardizations to choose from. When choosing a dietary supplement, select those from reputable manufacturers.

### **Cautions & Side Effects:**

- St. John's wort has been reported to be safe in recommended doses.
- St. John's wort should not be used if there is an allergy to any component of this dietary supplement.
- St. John's wort may cause photosensitivity in sensitive individuals – use with caution. This generally would only occur in higher dosages of St. John's wort.
- Caution should be used if taking the following medications with St. John's wort: Medications metabolized by the liver, as St. John's wort may alter CYP3A4<sup>31</sup> hepatic system.
- Specific medications reported to interact with St. John's wort include<sup>32</sup>:
  - Amitriptyline (Elavil) – Decrease<sup>34</sup>
  - Carbamazepine (Tegretol) - None
  - Cyclosporine (Sandimmune) – Decrease<sup>26</sup>
  - Digoxin – Decrease<sup>27</sup>
  - Indinavir (Crixivan) - Decrease
  - Irinotecan (Camptosar) - Decrease
  - Midazolam (Versed) - Decrease
  - Nevirapine (Viramune) - Decrease
  - Oral contraceptives – Decrease<sup>28,30</sup>
  - Sertraline (Zoloft) - Decrease
  - Simvastatin (Zocor) - Decrease
  - Tacrolimus (Prograf) - Decrease
  - Theophylline - Decrease
  - Warfarin (Coumadin) - Decrease

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