

## ⊗ | **The use of Ginkgo biloba may increase the risk of bleeding**

### ***The Science behind the Tip***

Extracts of the leaves of the Asiatic tree Ginkgo biloba (GBE) provide protection against mitochondrial oxidative damage from free radicals<sup>1</sup>. In addition GBE improves microcirculation<sup>1</sup>. Although proof of its neuroprotective effects in glaucoma patients is lacking and controlled trials are unlikely to be initiated, GBE has been used as adjuvant therapy in glaucoma cases that are progressing despite adequate treatment<sup>1</sup>.

Overall, GBE appears to be well tolerated. It does however contain ginkgolide B which is a potent antagonist against platelet-activating factor and thus acts as an anticoagulant. Bleeding has been associated to its use, ranging from nose bleeds and ocular bleeding<sup>2</sup> to life-threatening intracranial bleeding<sup>3,4</sup>. Some trials found that the association is much weaker than originally believed, but they are limited to a small sample size. In a review study, it appeared that most of the case reports identified other risk factors for bleeding<sup>5</sup>. Caution is thus chiefly advised in patients with bleeding disorders and those on anticoagulant therapy or on any drug that may increase the risk of bleeding. Further, it is sensible to stop GBE prior to some surgical procedures.

### ***References***

1. Cybulska-Heinrich AK, Mozaffarieh M and Flammer J. Ginkgo biloba: An adjuvant therapy for progressive normal and high tension glaucoma. *Mol Vis*. 2012;18: 390–402.
2. Rosenblatt M, Mindel J. Spontaneous hyphema associated with ingestion of Ginkgo biloba extract. *N Engl J Med*. 1997;336.
3. Meisel C, Johne A, Roots I. Fatal intracerebral mass bleeding associated with Ginkgo biloba and ibuprofen. *Atherosclerosis*. 2003;167.
4. Pedroso JL, Henriques Aquino CC, *et al*. Ginkgo biloba and cerebral bleeding: a case report and critical review. *Neurologist*. 2011;17:89-90.
5. Bent S, Goldberg H, Padula A and Avins AL. Spontaneous bleeding associated with ginkgo biloba: a case report and systematic review of the literature. *J Gen Intern Med*. 2005; 20:657-61.