

- May increase LDL by 10–30 % when used in high doses to treat high triglyceride levels.<sup>59,70</sup>
- Separate doses of orlistat and fish oil by at least two hours.<sup>18</sup> Refer to orlistat under 'Interactions'.
- Anti-thrombotic and anti-arrhythmic effects occur from the first weeks of use, but the heart rate–, blood pressure– and triglyceride–lowering effects may require months to years of therapy.<sup>59,62</sup>

### Pregnancy

Considered safe in amounts usually consumed in food. Maximum safe dose during pregnancy has not been established. Due to the potential for toxicity with high doses of vitamin A, it is recommended that therapeutic doses of cod liver oil be taken under medical supervision.<sup>15,18</sup>

### Breastfeeding

Likely to be safe when used orally and in recommended doses.<sup>71</sup>

### Contraindications

Theoretically, individuals allergic to fish might also be allergic to fish oil supplements, although there are no reliable data. Until more is known, advise patients allergic to fish to avoid fish oil supplements or use them with caution.

### Interactions

**Anticoagulants (e.g. warfarin), antiplatelet drugs (e.g. aspirin, clopidogrel) and NSAIDs**

(e.g. *ibuprofen*): Fish oils decrease platelet aggregation, and doses over 3 g daily taken with drugs that increase clotting time or inhibit platelet function may increase the risk of bleeding, particularly in the elderly. Monitor for bruising and overt bleeding.<sup>16,18</sup>

**Orlistat:** Orlistat binds to lipase in the gastrointestinal tract, reducing fat absorption, and there is a theoretical risk that orlistat may also decrease absorption of fatty acids from fish oil.

### Common dosage ranges

Dosing of products should be according to DHA and EPA content, rather than total fish oil.

**Capsules:** 3–4 g fish oil (900–1200 mg DHA and EPA) daily or two to three fish meals per week for secondary cardiovascular disease (CVD) prevention; 1–2 g fish oil (30–600 mg of DHA and EPA) daily, or one to two fish meals per week for primary CVD prevention; 2–4 g DHA plus EPA daily has been recommended for hypertriglyceridaemia.

Clinical trials have used a range of larger doses for rheumatoid arthritis, commonly between 3–5 g DHA and

EPA<sup>16</sup> or 15 mL of bottled fish body oil daily. Cod liver oil should be used at this dose only if the vitamin A and D have been removed.<sup>68,72</sup>

## garlic

*Allium sativum* (bulb; preparations include aged garlic extract, powder, oil)

### Common uses

#### Hypercholesterolaemia

**Evidence:** Results from clinical studies examining the ability of garlic to reduce LDL have been inconsistent. Studies in the 1990s reported modest benefits, but they are considered low-quality trials. A 2007 RCT in 192 patients with moderately high LDL compared fresh garlic and two different proprietary supplements with placebo. None of the garlic treatments was found to affect the lipid parameters after six months' treatment.<sup>73</sup>

#### Hypertension

**Evidence:** A meta-analysis of eight RCTs using a dried garlic powder preparation (*Kwai*) in a total of 415 participants found a small but statistically significant decrease in blood pressure, which was possibly dose and product dependent. Only three of the trials were conducted in hypertensive patients, so it was considered that, although garlic powder preparation may be of benefit in mild hypertension, there was insufficient evidence to recommend routine use.<sup>74</sup>

#### Cancer prevention

**Evidence:** Numerous population studies report increased dietary garlic decreases the risk of developing various cancers, although there appears to be a high level of bias and confounding factors.<sup>18,20</sup> More rigorous RCT trials using garlic supplements have not found data to support the recommendation of using high-dose garlic intake to prevent cancer.<sup>75,76</sup>

**Other reported uses:** Gastrointestinal motility disorders and coronary artery disease.

### Notes

- Generally considered non-toxic but may cause malodorous breath, body odour, nausea, diarrhoea and vomiting. Cases of contact dermatitis have been reported.
- To reduce potential for bleeding complications, advise patients to cease use for at least one week prior to undergoing surgery.
- 'Odourless' products are available, some of which may have limited amounts of active ingredient. Therapeutic doses of these products, however, still produce a garlic smell in up to 50% of users.<sup>15</sup>