

What are practitioner products?

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What are "practitioner-only-products"?

It can be confusing. Some "practitioner-only" brands are only available through qualified health care practitioners. Others seem to be available from eBay.

The idea behind the "practitioner-only" designation is simple. The majority of "practitioner-only" brands focus on producing higher quality, more potent products. Such products are manufactured to maximise impact and effectiveness, and therefore should only be accessed under the supervision of a qualified health professional.

Naturopaths and nutritionist for example, are trained in herbs and nutrients. They understand how the ingredients will affect you. Taking advice from a health professional on what products to take ensures safety risks are minimised and products are appropriate for your individual health needs.

This is not to say all "retail" products are inferior. When we provide examples below, this is simply to illustrate the fact "practitioner-only-products" are *typically* more effective, higher quality and should be taken with a specific context in mind.

Quality

What does this mean? Practitioner products are generally of a higher quality, and more potent, but how is this defined? There are a number of elements that contribute towards product quality and effectiveness. The source ingredients are obviously a significant element. The bioavailability of the ingredients is another. The [excipients](#) used in the manufacturing process place a role.

Effectiveness

As the products are generally more potent, this lends itself to supervised use under the instruction of a qualified health professional. As such, practitioner only products are not as accessible to the general public. Indeed practitioner only products are designed specifically for dispensing by a healthcare professional in accordance with section 42AA of the Therapeutic Goods Act 1989 [1].

Product quality can vary significantly across different brands due to many factors including active ingredients, manufacturing methods, encapsulation, dosage, molecular weight, excipients used, conditions a plant is cultivated in and supporting evidence ([1]).

Bioavailability

Bioavailability is influenced by many factors from both the host (human) and from the supplement itself. Bioavailability refers to how efficiently your body can use a nutrient. The commonly accepted definition of bioavailability is the proportion of the nutrient that is digested, absorbed and metabolised through normal pathways.

It has also long been recognised that gut microbes contribute to the biosynthesis and bioavailability of vitamins and nutrients. Maintaining a healthy gut is vitally important for proper nutrient synthesis and absorption as the gut microbiota synthesises certain vitamins and nutrients ([2]).

Bioavailability is also influenced by other factors including diet, nutrient concentration, nutritional status, health, and life-stage ([3]).

Excipients

Excipients selected for product formulation vary across the pharmaceutical and complementary medicine industries. The role of the excipient should not be underestimated, particularly when it comes to generic pharmaceuticals. A number of pharmaceutical excipients are known to have side effects or contraindications. For example, excipients may make up to 90% of a product formulation and may be synthetic or sourced from plants or animals ([4]).

Depending on the medication/supplement type, excipients may be nil to low. Powders and capsules generally require fewer excipients than tablets due to binding and coating ingredients required for a tablet.

Each excipient serves a specific purpose for the proper performance of the supplement dose and form, i.e. capsule, tablet, powder or liquid.

Form does matter...focus on minerals

Along with the importance of co-factors and ingredients being at a therapeutic dose, mineral absorption and bioavailability may be enhanced by the form the mineral comes in. Chelated minerals are minerals bound to a chelating agent which is designed to enhance their absorption in your body. An amino acid chelated mineral is a mineral (like calcium) that has been molecularly attached to an amino acid. Common amino acids used to make mineral chelates include aspartic acid, lysine and glycine. In general, animal studies indicate that chelated minerals are absorbed more effectively ([5]).

1st comparison - retail ([Caltrate Bone Health](#)) vs practitioner-only ([Interclinical Calcium Plus](#))

Ingredient types

Calcium supplements contain different kinds of calcium salts. Each salt contains varying amounts of elemental calcium. The most common calcium supplements are calcium carbonate (40% elemental calcium) or calcium citrate (21% elemental calcium).

More is not necessarily always best when it comes to certain nutrients. Calcium absorption is optimal when a person consumes no more than 500 mg at a time ([6]).

Absorbtion

The human body must be able to absorb calcium so that it is bioavailable and effective. An abnormally high calcium concentration can cause health problems and require medical treatment. Although dietary calcium is generally safe, excessive calcium does not provide extra bone protection.

Calcium Carbonate, also known as Chalk, Creta or CaCO₃, consists of 40% Calcium and 60% Carbonic Acid. It is derived from coral, limestone or marble and is the form of calcium present in egg shell, dolomite, and oyster shell.

Side effects

Calcium carbonate supplements tend to be cheaper, contain the highest amount of elemental calcium and is often associated with gastrointestinal side effects, including constipation, flatulence, and bloating. 92,000 adverse events have been recorded for calcium carbonate with the occurrence of constipation increased with calcium carbonate treatment (1,200 mg/d) in a 5-year, double-blind, placebo-controlled study ([7]).

Calcium carbonate requires more hydrochloric acid for its absorption than other forms of calcium and can also deplete the body's hydrochloric acid supplies.

Studies have also shown, calcium carbonate and other preparations of calcium (bone meal, dolomite) may contain contaminants such as lead, aluminium, arsenic, mercury and cadmium ([8]).

	Caltrate Bone Health	InterClinical Calcium Plus
Form of calcium	Calcium carbonate	Calcium glycinate
Formula	Calcium carbonate 600 mg Vitamin D ₃ 500 IU	Calcium glycinate dihydrate 838 mg equiv. calcium 150 mg Menaquinone 7 (Vitamin K ₂) 30 µg Cholecalciferol 2.5 µg equiv. vitamin D ₃ 100 IU Taurine 15 mg Lysine hydrochloride 15 mg
Excipients	croscarmellose sodium dl-alpha-tocopherol hydrogenated soya oil hydrolysed gelatin macrogol 3350 magnesium stearate maize starch maltodextrin polyvinyl alcohol purified talc silicon dioxide sucrose sunset yellow FCF aluminium lake titanium dioxide	acacia ascorbyl palmitate carnauba wax colloidal anhydrous silica croscarmellose sodium d-alpha-tocopherol glycerol guar gum lecithin magnesium stearate maize starch maltodextrin pregelatinised maize starch purified water silicified microcrystalline cellulose silicon dioxide sucrose

Caltrate Bone Health (Retail) excipients

- **Sunset yellow FCF aluminium lake** is a petroleum-derived orange azo dye. It's full chemical name is disodium 2-hydroxy-1-(4-sulfonatophenylazo)naphthalene-6-sulfonate. It can be converted to the corresponding aluminium lake, leading to an additional exposure to aluminium (JECFA, 2004). Individuals generally sensitive to foods or other compounds may react at dose levels within the acceptable daily intake (ADI) ([9]).
- **Hydrogenated soybean oil.** Hydrogenation removes the necessary essential fatty acids

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contained within the original oil. It is a process in which liquid unsaturated fat is turned into a solid fat by adding hydrogen, resulting in a transfat. This process is often used to extend shelf life and save money. Transfats have been shown to increase the risk of coronary heart disease ([10]).

Interclinical Laboratories Calcium Plus (Practitioner only) ingredients & excipients:

- **Calcium glycinate**
 - Glycine's small size and neutral charge make it ideal for facilitating the delivery of minerals within the body; increasing its ease of absorption ([11]).
 - The body efficiently absorbs individual amino acids and due to its neutral charge and small molecule size, glycine has been identified as a sufficiently small enough molecule to carry minerals into the cells.
 - This formulation has D3 which increases the amount of calcium that the intestines can absorb from food and is extracted from organic lichen. Vitamin K2 enables binding to the bone matrix. Taurine regulates intracellular calcium homeostasis (prevent calcium overload). Lysine enhances intestinal absorption of calcium and contributes to a positive calcium balance.
- **Colloidal anhydrous silica** is produced synthetically from sodium silicate. It is used to allow powder to flow freely when tablets are processed.
- **Acacia** is a complex polysaccharide and a pharmaceutical excipient obtained from plants of *Acacia Senegal* (L) or other species of Acacia. It is used as a suspending and emulsifying agent, as an adhesive and binder
- **Carnauba wax** is used for tablet coatings and binding. It comes from the leaves of the *Copernicia prunifera* palm grown only in Brazil.

2nd comparison - retail (Ostelin Vitamin D3 1000IU) vs practitioner-only (Orthoplex Vitamin D 1000IU)

Vitamin D3 is cholecalciferol and comes from animal-based sources.

	Ostelin Vitamin D3 1000IU	Orthoplex Vitamin D capsule 1000IU
Formula	colecalciferol .025 mg	Cholecalciferol 25 µg
Excipients	gelatin glycerol iron oxide black iron oxide red mixed (low-alpha type) tocopherols concentrate purified water soya oil	dl-alpha-tocopherol gelatin glycerol purified water rice bran oil vegetable oil

Ostelin Vitamin D3 1000IU capsule (Retail) ingredients & excipients

- **Iron oxide black and red** are inexpensive and durable pigments in paints, coatings and colored concretes. When used as a food coloring, it has E number 172. E172 contain nanosized particles. There is increasing concern that these nanoparticles could exert major adverse effects by accumulating in several organs rather than being metabolised. Research has identified that E172 food additives induce gastrotoxicity, hepatotoxicity and alterations

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in gut microbiota, with most evidence indicating that oxidative stress is the main mechanism of toxicity ([12]).

Orthoplex Vitamin D capsule 1000IU (Practitioner only)

- **Gelatin** is animal protein from cow or pig. Gelling agent used to assist coating the outside of capsules making them easier to swallow. The World Health Organisation (WHO) has ruled that gelatin has been transformed to such an extent from its original source, it is permissible for those with religious dietary restrictions ([13]).
- **Glycerol** is a low glycaemic index sweetener and preservative with antimicrobial properties, and is a useful alternative to ethanol

How can I access “practitioner only products”?

If you are not currently working with a healthcare professional, you can [find a practitioner here](#).

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