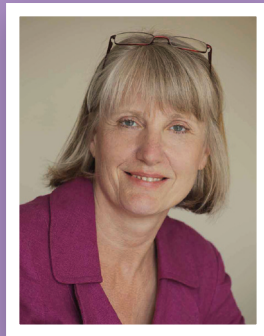


Glenville

NUTRITION

CENTRES **CLINICS** COURSES

UNDERSTANDING SUPPLEMENT QUALITY –



Dr Marilyn Glenville PhD

Tips for Choosing Food Supplements

There are many reasons that you may choose to take food supplements and if you are reading food labels and think that the quality of your food is important, then it is crucial to know that not all food supplements are created equal.

I will cover what to look for when choosing supplements but people might ask why we need to take supplements at all as it should be enough just to eat a 'well balanced diet'.

I think the 'well balanced diet' is a myth and nowadays food supplements are an important addition to your diet.

We have problems with our food in that it does not contain the nutrients that it used to. When compared to the 1930s, the fruits and vegetables we eat contain an average of 20% fewer minerals (magnesium 24%, calcium 46%, iron 27% and zinc 59%).

The meat and dairy products are also depleted in nutrients with iron being depleted in meat by 47%, 60% in milk and calcium loss in cheese up to 70% for Parmesan cheese (*The Independent Food Commission's Food Magazine 2005*).

Food, especially fruits and vegetables, can be flown hundreds of miles and may have been sitting in warehouses for days before being delivered to the shops and this will further cause the nutrients to be depleted.

How to take supplements

I would suggest that you always have a multivitamin and mineral as the foundation of your supplement programme. Choose the multi depending on your age, sex and what stage you are in your life. So you would choose a different multi if you are trying to get pregnant than if you want a multi for your general health and you would choose a different one if you are going through the menopause. Because you have different nutritional needs at different ages and stages of your life, you can use food supplements, along with a healthy diet, to help you meet those needs.

I would suggest you take a vitamin C supplement alongside the multi as there is never enough vitamin C in a multi and use a separate Omega 3 supplement as well. So these three products would form the basis of a good maintenance supplement programme.

What should you be looking for when choosing a food supplement?

You really do get what you pay for when buying supplements so it is worth choosing the best that you can afford.

Here are some useful tips to know what you are looking for on the label of a food supplement.

Always buy capsules instead of tablets

Your digestive system has to work harder to release the nutrients from a tablet as binders are used to compress the ingredients into a solid shape. In comparison, with a capsule your digestive system just has to dissolve the capsule in order to release the nutrients. Apart from tablets being harder to break down and digest, the binders can be substances that you are aiming to avoid in your foods. Binder can include sucrose, lactose, sugar alcohols like sorbitol or synthetic polymers like polyethylene glycol.

Choose vegetarian capsules

If a supplement just says gelatine capsules then the gelatine is made from cow or pig gelatine. Gelatine is produced by boiling skin, ligaments, tendons or bones of the animal.

I would consider vegetarian capsules to be a healthier option than these gelatine capsules which are made from the discarded remains from the slaughterhouses.

You can buy Omega 3 fish oil supplements where the capsules are made from fish gelatine rather than cow or pig and it will be clear on the container that this is the case.

Look at the form of the nutrients

Not all forms of the same nutrient are absorbed and used in your body in the same way. For instance, not all calciums are the same. As well as looking to see what nutrients are contained in the supplement e.g. calcium, zinc, vitamin B6, you also want to know what form those nutrients are in.

The form of the nutrient will determine how well you will absorb the nutrient and how effective they can be.

- Avoid minerals in the form of oxides, sulphates, chlorides and carbonates. These are inorganic forms of these minerals and are more difficult to absorb and so your body has to work harder to get the benefit from them. In this context, inorganic means that these are geological forms of these minerals, ie they come from the ground. Calcium carbonate is chalk and is mined from the ground. Organic minerals are in the form that they are found in plants and are more easily absorbed. When we eat plants we are eating minerals in their organic form. If you have ever taken iron as ferrous sulphate then you know that it can cause black stools or constipation. This is because ferrous sulphate (iron sulphate) is an inorganic form of iron and you only absorb about 2-10% of iron from this type of iron supplement. The effect on your bowels is because the iron is being eliminated and not being absorbed efficiently.

- You want to choose minerals in their organic forms such as citrates or ascorbates. So choose calcium in form of calcium which is almost 30% more absorbable than calcium carbonate. This is the same for all the minerals not just calcium. Choose magnesium as magnesium citrate. You could take 300mg of magnesium in the form of magnesium oxide (an inorganic mineral) and absorb maybe 6% of the magnesium but if you take 300mg of magnesium as magnesium citrate you can absorb up to 90%
- With vitamin E choose the form that says d-alpha-tocopherol, as this is the natural version of vitamin E. DL-alpha-tocopherol is the synthetic version and is not so easily absorbed.
- Choose vitamin B6 as pyridoxal-5-phosphate (P-5-P). This is the active form of B6 which your body can use. If you choose a supplement where the B6 is in the form of pyridoxine (which is a much cheaper form) your body has to convert it into P-5-P in order to get the benefit. If you are run down, tired or stressed then your body may not be able to make this conversion from pyridoxine to P-5-P and so you do not get the benefit of this important vitamin.
- Always make sure that the vitamin D is in the form of D3 also called cholecalciferol. There is a cheaper form called D2 (ergocalciferol) but it is not as beneficial as D3 in correcting deficiencies in your body, in fact research has suggested that vitamin D3 is 87% more effective at raising and maintaining your level than vitamin D2. Researchers have said that 'the assumption that vitamins D2 and D3 have equal nutritional value is probably wrong and should be reconsidered'.
- With vitamin C choose the ascorbate form which is alkaline rather than the acidic form as ascorbic acid. The ascorbate form is much gentler on your digestive system and it will be clear on the label as to what form the vitamin C is in and will say magnesium ascorbate.
- Avoid probiotic drinks as they can be high in sugar. Instead, go for a supplement that does not contain maltodextrin (which is rapidly converted to glucose so has a high GI and can affect blood sugar levels). Also if the probiotic is a liquid it will need a preservative to stop it going off, this is often potassium sorbate. It's easier if you use a probiotic that is freeze dried as it won't need refrigerating so you can take it with you when you travel to prevent digestive upsets.
- With fish oils, don't just look at the amount of fish oil which might say 1,000mg. The most important piece of information is the amount of EPA and DHA that the supplement contains which may be on the back of the label. You are aiming for 770mg EPA and 510mg DHA per day. It is also important to have the oil from the body of the fish rather than from the liver as in cod liver oil capsules. Fish absorb toxins and chemicals and oil taken from the liver – the organ of detoxification – is likely to have higher quantities of these. A while back a number of companies had to take their cod liver oil supplements off the market as they contained very high levels of toxins called dioxins. Cod liver oil will also contain high levels of vitamin A which is not recommended during pregnancy. Also try and make sure that the Omega 3 fish oil you choose uses wild fish (not farmed) and small fish such as anchovies and sardines. Large fish like tuna can contain high levels of mercury.

Omega 3 oils

I am going to explain Omega 3 oils in more detail as there has been a lot of confusion around this subject. I mentioned in the previous section that you should check the amount of EPA and DHA within the supplement you are buying, but there is also something else that you need to check and that is the form of the Omega 3 oil.

Are you confused by all the different Omega 3 oils on the market and the different strengths?

You may be surprised to know that not all Omega 3 oils are the same and the difference is really important to your health.

There are three different main forms you can find Omega 3 oils in:

- Triglyceride
- Ethyl esters
- Phospholipid

The form in which you absorb omega 3s from eating oily fish is in the triglyceride form so this is the most natural version. Over 98% of all fats are in this triglyceride form.

Some fish oil companies use the ethyl ester forms which means the oils are in their synthetic state and in alcohol. Ethyl esters are the cheapest form to produce but they are also the least bio-available meaning that they are harder to absorb. As your body usually ingests fats in the triglyceride form it means that if you take in an oil in the ethyl ester form your body has to rebuild this fat back into a triglyceride.

Research has shown that the triglyceride fish oils are better absorbed than the ethyl ester forms. Ethyl esters are also less stable than triglyceride fish oils and so can oxidise creating free radicals.

In nature, none of the fish oils is in the ethyl ester form so we need to take in fish oil in the same form as we would eat them in the fish i.e. as triglycerides.

So between triglyceride and ethyl esters form of Omega 3 fish oil, it is clear that the triglyceride form is better.

The controversy starts when we look at the comparison between the triglyceride and phospholipid forms.

This has come to the forefront now because of the publicity around krill oil as a source of Omega 3 and it is suggested that krill oil is more superior as it is in the phospholipid form.

A study in 2013 suggested that krill oil could be more effective than fish oil in improving Omega 3 levels and reducing the Omega 6 to 3 ratio and then in 2014 researchers suggested that this study was flawed because the scientists did not use a typical fish oil (which is high in Omega 3) but a fish oil high in linoleic acid which is an Omega 6 fatty acid. So it was understandable that if you compare two oils (krill and one high in Omega 6) that the krill will increase the Omega 3 levels and improve the Omega 6 to Omega 3 ratio if the other oil is high in Omega 6 in the first place.

The scientists made this comment 'Due to the fatty acid profile being non-representative of typically commercially marketed fish oil, the conclusions presented by Rasmprath et al are not justified and misleading. Considerable care is needed in ensuring that such comparative trials do not use inappropriate ingredients'.

More fuel was added to this controversy in 2014 when research re-examined the studies which have looked at the bioavailability of krill oil. They point out that it has proven difficult to compare the bioavailability of krill oil versus fish oil because of the lower concentrations of both EPA and DHA in krill oil compared to fish oil. They point to other factors that have made it difficult to compare the two and conclude 'that there is at present no evidence for greater bioavailability of krill oil versus fish oil'.

The levels of EPA and DHA in krill oil are very low and if the krill oil is not more bioavailable ie absorbable than fish oil as the research shows then the levels are not high enough. Just to give you an example:

One krill oil supplement in 2 capsules contains:

Krill oil	1000mg
Omega 3	220mg
EPA	120mg
DHA	55mg

Whereas **NHP's** Omega 3 Support fish oil I use in the GNC clinics, 2 capsules contains:

Fish oil	2347mg
Omega 3	1400mg
EPA	770mg
DHA	510mg

One well known supplement company who sells krill oil, has now 'fortified' (their words) their krill oil supplement with fish oil on their 'nutritionists' advice'. As they feel that the jury is still out on krill oil. It just makes more sense to take fish oil in the first place and not krill.

My other concern around krill is that it is not a fish but a crustacean and the bottom of the food chain for so many animals including whales, fish, seals and seabirds. It seems that the whole Antarctic ecosystem revolves around krill. I had also understood that the natural foods store Whole Foods Market took krill oil off its shelves in 2010, because of the decline in certain sea animals, whales, penguins and seals where the krill is harvested.

So when the levels of EPA and DHA in krill oil are so low and the absorption is not better than fish then I would suggest that it makes more sense for us to get our Omega 3 oils from further up the food chain.

Read the Label

I know many of you are keen label readers when it comes to your food and drink which is brilliant but you need to do the same when choosing supplements. The ingredient list on supplements may not always be obvious and could be at the bottom of a box.

And, as with food don't get seduced by the hype on the front or a long list of impressive-sounding nutrients. What else has been added to this supplement? There could be added sugar, artificial sweeteners, fructose, colourings, flavourings, and glucose. More may be added if the supplement is chewable or fizzy to make it more palatable.

You could have chosen a capsule instead of a tablet but there may be other ingredients added which you may not have been aware of before. These are called excipients and are non-active ingredients with no nutritional value to you added inside the supplement capsule. You only want the active ingredients like the vitamins and minerals that have bought the supplement for.

There may be obvious ones as above like the colourings and sweeteners. But other ingredients are added to most capsules on the market which are only there for the manufacturers benefit not yours.

They can be lubricants, anti-caking agents, disintegrants, fillers or bulking agents and many of these excipients as they are called, make the supplements faster and easier to manufacture and so are cheaper for the companies to make.

Without lubricants and anti-caking agents the manufacturing process has to be slowed down to allow the nutrients to flow into the capsules. This actually presents a huge challenge for a lot of manufacturers so most supplement companies on the market will just have these non-active, non-nutrients added into the capsules. Also when the machinery is slowed down, less heat is generated and this is beneficial when dealing with natural ingredients like herbs and enzymes.

Also when these excipients are added to the supplements this means that there is less space for the active nutrients because the lubricants and anti-caking agents are taking up that space. Also supplement companies are not required to list the amount of excipients in the supplement so you can't see how much of the inactive ingredients there are compared to the active nutrients you really want.

Excipients can include magnesium stearate, titanium dioxide, talc, calcium hydrogen phosphate dehydrate, stearic acid.

My preferred range of supplements is from The **Natural Health Practice**. I was invited to help formulate them so know they meet all the considerations detailed in this report and can recommend and use them with confidence throughout the GNC clinics

THE NATURAL HEALTH PRACTICE RANGE OF PREMIUM VITAMINS, MINERALS AND SUPPLEMENTS

Everything women need to get healthy and stay healthy - naturally

Weight management



Amino Support

- A special blend of 8 specific amino acids scientifically proven to help reduce fat from around your waist

Nutri Support

- A special multivitamin and mineral that contains all the most important nutrients scientifically proven to help reduce fat from around the waist



All ingredients are:

- ✓ In their most bio-available form to aid absorption
- ✓ Hypoallergenic – free from sugar, gluten, starch, wheat, yeast, soya and dairy products
- ✓ Free from genetically modified organisms (GMOs)
- ✓ Made without the use of artificial flavours, colours or preservatives
- ✓ There are no fillers, binders, anti-caking agents, artificial sweeteners etc.
- ✓ Contained in vegetable capsules (excluding Omega 3 Fish Oil)
- ✓ The Vegetarian Society approved (excluding Omega 3 Fish Oil)
- ✓ Kosher approved

THE NATURAL HEALTH PRACTICE RANGE OF PREMIUM VITAMINS, MINERALS AND SUPPLEMENTS

Everything women need to get healthy and stay healthy - naturally

For pre-menstrual wellbeing



Agnus Castus Support

- This unique blend of Agnus Castus, Black Cohosh, Skull Cap and Milk Thistle complement each other and work effectively together to help maintain female hormone balance

PM Support

- Specially selected nutrients to support women through the month



All ingredients are:

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Everything women need to get healthy and stay healthy - naturally

Supporting Fertility and pregnancy



Fertility Support for Men

- Contains the highest quality and most bio-available essential vitamins and minerals, formulated in the most effective doses which are scientifically proven to help optimise sperm health and promote conception

Ante Natal Support

- Formulated to give mother and baby all the essential vitamins and minerals important for a healthy pregnancy

Fertility Support for Women

- Contains the highest quality and most bio-available essential vitamins and minerals, formulated in the most effective doses which are scientifically proven to help promote conception and stay pregnant



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Supporting Menopause and Osteoporosis



NEW & IMPROVED

Meno Herbal Support

- A special organic herbal supplement for women during and after the menopause

Meno Support Multi

- A special blend of vitamins and minerals specifically formulated to provide all the essential vitamins and minerals needed to help you through the menopause and support good bone health

Osteo Support

- Osteo Support includes only the highest quality and most important nutrients scientifically known to help maintain good bone health

Black Cohosh Nutrition Support

- With a unique blend of organic herbs for women over the age of 45

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Everything women need to get healthy and stay healthy - naturally

Digestion and Detox



Advanced Probiotic Support

- A source of beneficial bacteria for balancing digestive health and supporting the immune system. With added prebiotics, gamma oryzanol and glutamine

D-Tox Support

- A unique botanical combination including flaxseed, psyllium and chlorella to support bowel function and complement cleansing programmes

IB Support

- A unique botanical formulation including ginger, chamomile and liquorice to help provide support for healthy digestion and bowel function



All ingredients are:

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THE NATURAL HEALTH PRACTICE RANGE OF PREMIUM VITAMINS, MINERALS AND SUPPLEMENTS

Everything women need to get healthy and stay healthy - naturally

Feeling Good!



Hair, Skin & Nail Support

- Helping maintain beautiful hair, skin and nails from the inside out

Tranquil Woman Support

- For women trying to manage a busy lifestyle in today's stressful world

Immune Support

- Formulated especially for healthy immune function

Brain and Memory Support

- A special combination of carefully selected nutrients to support healthy brain function and memory.

Libido Support

- An exceptional botanical combination for women who want to revive those intimate moments.

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Joint and Bone health



D-Flam Support

- Including ginger and turmeric to help maintain healthy joints and muscles. Plus olive leaf and quercetin, two powerful antioxidant. Also contains hops for calming and black pepper to soothe.

Vitamin D3 Support Spray

- Contributes to the maintenance of normal bones and muscle. Vitamin D is normally produced when skin is exposed to sunlight. Vitamin D is needed for normal growth and development in children. This spray form of vitamin D3 is ideal for helping the young and vulnerable get the levels required

Omega 3 Support

- Ultra pure wild deep sea fish oil. Rich in Omega 3 fatty acids with high levels of EPA and DHA. Essential fats 'oil' the body by lubricating the joints and skin, as well as being a vital component of every human cell

Osteo Support

- A special combination to help maintain good bone health. Osteo Support is a special multivitamin and mineral supplement formulated to help maintain strong healthy bones. Osteo Support includes only the highest quality and most important nutrients scientifically known to help maintain good bone health.

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Everything women need to get healthy and stay healthy - naturally

*Essential supplements
for health and wellbeing*



Vitamin C Support

- Made from Magnesium Ascorbate. Vitamin C is one of the most important vitamins which is essential for optimum health and the efficient functioning of the many different systems of the body

Healthy Woman Support

- Ideal multivitamin combination. For every woman to help maintain a healthy, active lifestyle and optimum wellbeing

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