Benefits of diet, nutrition and the role of micronutrients (vitamins and minerals) during Covid-19 Pandemic
Throughout the Covid-19 pandemic, it is important to take measures to reduce the risk of infection by strengthening your immune system with a balanced diet.

A balanced diet consists of the following:

**Macronutrients**
There are three macronutrients:
- Proteins
- Carbohydrates
- Fats

These are building blocks of your body that give you energy, growth, strengthen your immune system, and overall help repair your body. It is therefore important to include them in your diet.

**Micronutrients**
Multiple micronutrients (vitamins and minerals) are essential for good immune function, particularly. These include:
- Vitamins A, C, D, E, B2 (riboflavin), B6 (pyridoxine), B12 (cobalamin) and B9 (folic acid)
- Minerals: iron, selenium, zinc, magnesium and copper

You can obtain micronutrients from a balanced diet (see the end of this leaflet for some of their natural sources), or take them as food supplements (tablets, capsules or liquids). Remember to ask your pharmacist or doctor before taking them in the form of food supplements.
Why is it important to sustain healthy levels of vitamins and minerals?

Vitamins help regulate the immune system and other body functions so poor nutritional diet can make you more susceptible to infections. A National Diet and Nutrition Survey (2019) showed an inadequate intake and/or level of vitamin D, vitamin A (retinol), folate and selenium across the UK population and in specific age groups.

Why is taking vitamin D particularly important during Covid-19 pandemic?

Taking vitamin D would not prevent you from getting Covid-19; but avoiding vitamin D deficiency is important in remaining healthy overall. Vitamin D (sometimes called colecalciferol) helps to maintain bones, teeth, muscles and general wellbeing. Normally you would get enough vitamin D from sunlight between March and September. However, during Covid-19 lockdown you may not be getting enough sun exposure. A low level of vitamin D is called ‘vitamin D deficiency’. The main symptoms of vitamin D deficiency are bone pain or unexplained tiredness.

Who is most at risk of low levels of vitamin D?

National advice tells us there is a greater risk of vitamin D deficiency in people who:

- Are over 65 years of age
- Are overweight
- Are pregnant or breastfeeding
- Are spending a lot of time indoors
- Have darker skin tones such as those of Mediterranean heritage or Black, Asian and Minority Ethnic (BAME) background including those of mixed-race.

Potential side effects from taking vitamin and mineral supplements

Most people do not experience side-effects from taking them. However, like any treatment there is a possibility of experiencing side effects, so it is important to not exceed the recommended dose and to report any new symptoms to your pharmacist or GP.
I have dietary requirements; can I still take vitamins and minerals supplements?

If buying supplements, you will need to check at the time if it is appropriate for you. If you have any illness such as a kidney or liver impairment or are pregnant or breastfeeding you will need to discuss with your healthcare team. Ask your pharmacist if you require vegan or vegetarian supplements.

This leaflet has been written to give you a useful guide on maintaining a balanced diet, whether it is from food and drink or food supplements.

If you take supplements, you will also receive the manufacturer’s leaflet which will have guidance specific to the supplement you are taking. If you have any concerns, you should discuss your medicine with your pharmacist, doctor, nurse, or other healthcare professionals.

Further information

Taking medication during Coronavirus (COVID-19)
www.cnwl.nhs.uk/coronavirus-updates/medicines-information

Acknowledgements

NNEdPro Global Centre for Nutrition and Health
www.nnedpro.org.uk/covid-19nutrition-resources

Key contact details

Medicines Information Helpline (MIH) for patients and carers
020 3317 5090
Monday to Friday, 9am to 5pm

Single Point of Access (SPA):
0800 0234 650
Freephone – 24 hours a day, 7 days a week.
Sources of vitamins and minerals from diet:

**Vitamin A:** Broccoli, spinach, kale, dairy, fish and eggs.

**Vitamin C:** Citrus fruits (oranges), papers, onions, cabbage, green leafy vegetables (kale/spinach), mango and strawberries.

**Vitamin D:** Fish (salmon), dairy products (milk/cheese), and red meat. Also, from skin sun exposure unless your doctor advises you to protect your skin from exposure to direct sunlight. It can still be difficult to get enough vitamin D from food alone so check with your pharmacist or doctor before taking vitamin D supplements.

**Vitamin E:** Vegetable oils (wheat gem/sunflower), nuts (peanuts/hazelnuts/almonds), sunflower seeds, green vegetables (kale/spinach), fortified foods (breakfast cereals, fruit juice – not from concentrate).

**Vitamin B2 (Riboflavin):** Beef liver or tender loins, fortified cereals, oats, plain fat free yogurt, milk, mushrooms, almonds, and cheese.

**Vitamin B6 (pyridoxine):** Chickpeas, meat (beef liver, chicken breast), fish (salmon/tuna), fortified cereals potatoes, and banana.

**Vitamin B9 (folate):** Green vegetables (broccoli/spinach/kale), beans and legumes, oranges, whole grain, meat (poultry/pork/liver) and shellfish (oyster/crab/lobster).

**Vitamin B12 (cobalamin):** Seafood (clams), meat (beef liver), oily fish (trout/salmon), fish (tuna/haddock), and dairy (milk/yogurt).

**Iron:** Haem sources (red meat, liver or other organ meats); non-haem sources (spinach, legumes, quinoa).

**Zinc:** Shellfish (oyster/crab/lobster), pork chops, baked beans, fortified breakfast cereal, and pumpkin seeds.

**Selenium:** Brazil nuts, fish (tuna/sardines), Shellfish (prawns), meat (turkey/beef stack, chicken), eggs, and cottage cheese.

**Magnesium:** Almonds, spinach, cashews, cereal, and beans (black beans/edamame).

**Copper:** Beef liver, shellfish (oyster/crab), potatoes, mushrooms (shiitake), cashews, and sunflower seeds.