THE HEALTHY AGEING CHALLENGE

Which nutrients support health and wellbeing in later life and how can older Brits meet dietary requirements?

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FOREWORD

Growing older is a fact of life yet some of us age more gracefully, and with more vigour and health, than others. Genetics aside, diet, exercise and avoidance of harmful habits, such as smoking and excessive alcohol consumption, are key to slowing cognitive and physical decline, as well as reducing the risk of chronic or degenerative diseases.

The evidence suggests that eating a balanced diet – rich in micronutrients and high in fibre and protein - can help to lower the risk of health problems associated with later life. A growing number of studies also reveal that certain nutrients protect against joint problems, reduced muscle mass, bone loss, cognitive decline, heart disease and cancer. However, while it is clear that good nutrition is the foundation for optimal health at any age, the stark reality is that 20% of our lifetime on average will be spent in poor health according to the Office of National Statistics[1,2].

Obesity may grab the headlines but data consistently show that, beneath the excess body fat, nutrient insufficiencies are common, particularly in the case of vitamin D, iron, calcium, long-chain omega-3s and some B vitamins. Malnutrition, defined as a lack of calories/ macronutrients, or micronutrients or both, is also common in elderly people and in hospital patients, affecting around three million people in the UK. Therefore, we need to look beyond calorie control to ensure that people live longer, healthier lives. This was the topic of a Healthy Ageing Panel, held in London 2016.

The 'food first' message remains the cornerstone of any advice to the public but there is recognition that it can be challenging to source optimal amounts of some nutrients from diet alone, and increasingly so as we age. Reasons for this include increased requirements for some nutrients, reduced nutrient bioavailability, limited access to nutrient-rich foods, poor cooking skills, disability, poor appetite, and ill-health. This is why there is now an emerging consensus that a daily multivitamin and mineral supplement, providing a broad spectrum of vitamins, minerals and other nutrients, plus an omega 3 supplement, could help to address the gap between current and recommended intakes.

Following evidence presented at an expert Healthy Ageing Panel round-table, the Panel noted a consensus that a daily multivitamin and mineral supplement could sit alongside dietary advice, particularly for vulnerable groups, to ensure that nutrient deficits are addressed rapidly and cost-effectively. Getting the nutritional balance right as we age gives all of us a greater chance of achieving optimal health during those years when we should be enjoying the prime of life.

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Healthy Ageing Panel facilitators

EXECUTIVE SUMMARY

In recognition of the population time bomb facing the UK, where increasing numbers of elderly people will be at risk of ill-health and malnutrition, a Healthy Ageing Panel was convened. The remit was to examine micronutrient intakes in adult populations in the UK and ascertain risks for deficiency and insufficiency, with evidence reviewed and debated. The role of micronutrients supporting healthier ageing was also explored.

The findings and subsequent debate revealed that

- Twenty percent of the average person's lifespan in the UK is spent in ill-health, despite the likelihood of living a longer life.
- There is growing evidence that long chain omega-3 fatty acids, B vitamins, vitamin D, calcium and possibly vitamin K offer benefits for healthier ageing, including advantages to cognitive function, bone health, immune function and eye health.
- Intakes of micronutrients in UK adults, particularly those aged over 65 years, often fall below recommended levels. Depending on gender, age and socio-economic group, risk of deficiency can be significant for vitamin A, vitamin B2 (riboflavin), folate, calcium, magnesium, potassium, zinc, selenium, iodine and long-term omega-3 fatty acids.
- Public Health England (PHE) has always recommended routine vitamin D supplementation for 'at risk' groups, including the over 65s, housebound adults and those who cover their skin for cultural reasons. This advice has recently been updated to recommend a daily vitamin D supplement of 10 mcg during autumn and winter for all adults and children. Yet, only four in ten older people take any form of food supplements, mostly cod liver oil.
- Attendees at the Healthy Ageing Panel expressed concern at vitamin D insufficiency in the UK and recognised that bridging vitamin D dietary gaps could not be resolved using food alone. Supplements, the Panel noted, have a fundamental role to play alongside diet.
- Higher intakes of nutrients may be warranted for certain groups and should be part of advice from a health professional. Food and supplements should be part of this discussion. As a result, Panel attendees noted a daily multivitamin and mineral supplement, providing a broad spectrum of vitamins, minerals and other nutrients, plus omega-3 supplements, would help to address the dietary health gaps for those over the age of 60 years.

CONSENSUS OF THE HEALTHY AGEING PANEL

- There is growing and compelling evidence that specific nutrients support healthy ageing which is why dietary recommendations should not just be focussed on macronutrients.
- The Panel agreed a 'food first' approach which puts an evidence-based healthy dietary pattern at the centre of any advice to the public.
- Food supplements which provide intakes around the recommended level have a role in helping individuals to meet their nutritional requirements. 'Recommended level' relates to Nutrient Reference Values (NRV) for micronutrients, and SACN guidance for long-chain omega-3 fatty acids and vitamin D.
- Higher intakes of nutrients may be warranted for at risk groups and should be part of advice from a health professional. Food and supplements should be part of this discussion.
- Year round supplementation messages should be targeted at groups vulnerable to insufficiency or deficiency, e.g. older people, those from lower socio-economic groups, housebound adults and people with darker skins in the case of vitamin D.
- The new advice from PHE to encourage routine supplementation with 10 mcg vitamin D in the autumn and winter for everyone over the age of one year is acknowledged.

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SECTION ONE: LIVING LONGER BUT NOT HEALTHIER

The ageing population is one of the major challenges facing the UK today. People are living longer, but not necessarily healthier lives. Life expectancy at birth increases by nearly three years each decade but current figures estimate that 20 per cent of our lifetime on average will be spent in poor health[3,4], requiring medical support, care or drugs. For the sake of quality of life, as well as NHS budgets, there is an urgent need to identify ways to help people live healthier, active lives. Part of this is recognising the important role that diet and nutrition has to play.

> 'The Royal College of General Practitioners has predicted an 'explosion' of people living with more than one serious, life-threatening condition in the next decade and estimates that almost one million people will be living with a long-term health problem by 2025'[5]

The Royal College of General Practitioners has predicted an 'explosion' of people living with more than one serious, life-threatening condition in the next decade and estimates that almost one million people will be living with a long-term health problem by 2025[5]. Indeed, the toll of ill health in the UK is a statistical horror story. Almost one-quarter of the over-50s have diabetes[6], there are more than 130,000 cases of cancer in Britons aged 50-70 years[7] and 42,000 heart attacks affect the under 75s annually[8]. One of the underlying problems is that seven in 10 adults aged from 45 to 84 years are overweight or obese[9]. Calories are plentiful, but our ability to balance these with optimal intakes of fibre, vitamins, minerals and other nutrients appears to deteriorate with age.

Diet is acknowledged, alongside physical activity, as important in helping to prevent age-related disease and disability. The links between smoking and cancer are well known but less recognised are the risks associated with excess alcohol consumption in terms of cancer aetiology and cognitive decline. Obesity is a major risk factor for type 2 diabetes, along with the related problems of high cholesterol and blood pressure which drive cardiovascular disease. Yet, the development of obesity, type 2 diabetes, heart disease, stroke and cancer can all be influenced by improving diet and nutrition[10]. The outlook for age-related conditions such as joint problems, sight decline, poor muscle mass leading to falls, and low bone density leading to fractures is also susceptible to change through better nutrition, as is declining brain function - a dreaded outcome for many older people.

At whom should this advice be targeted, given that the problems of a lifelong poor diet and lifestyle rarely manifest themselves before the fifth or sixth decade? The general lack of understanding about nutrition exhibited by recent generations of Britons means most will only be dimly aware of changing nutritional needs as people age. From our 40s onwards, the

metabolism slows and calories are burnt at a slower rate, partly due to a sedentary lifestyle. Obesity risk peaks in the 50s and 60s, particularly in men. Calorie counting may address weight gain but it can mean that essential nutrients which support healthier ageing are consumed in lower than optimal amounts.

In addition, chronic vitamin D deficiency, influenced by limited summer sun exposure as well as inadequate dietary intake, is likely to be impacting on immune function and bone density by the time a person reaches middle age.

The loss of muscle mass and bone density - particularly in women - are often accepted as age-related inevitabilities but there is evidence that this is not the case and that exercise, diet and vitamin D synthesis are all capable of delivering protective effects[11]. Less amenable to change is the reduced ability to absorb or assimilate certain nutrients as we age, particularly vitamin B12 and vitamin D. Yet most population dietary guidelines fail to mention nutrient bioavailability and do not provide any specific advice to older people.

Ignorance of nutrition or perhaps elevating other priorities above healthy eating results in many people arriving at the starting gate for old age in less than ideal shape. Obesity is now the new body weight 'norm' for older age groups yet there is evidence that the diets of these 'over nourished' older people are nevertheless lacking sufficient amounts of vitamins, minerals and essential fatty acids[12]. There may be a belief in the media that '60 is the new 50' but this ignores the worrying situation observed by health professionals regarding levels of disease and disability in older age groups. Clearly, complacency is not an option.

FACT:

The absorption of vitamin B12 requires a substance called intrinsic factor which is produced by parietal cells inside the fundus of the stomach. As we age, less and less intrinsic factor is produced with an adverse impact on vitamin B12 absorption. This is why vitamin B12 deficiency is common in elderly people.

A healthy diet helps protect individuals from malnutrition and diseases including heart disease, stroke, diabetes and cancer[13]. However, a systematic review published in the *Journal of Human Nutrition and Dietetics*[14] identified a number of disturbing nutritional gaps common among older adults in the UK. One conclusion was that people needed extra advice and support from mid-life onwards to achieve optimal nutritional intakes to support healthy ageing. The authors stated that improvements to diet could be made through the 'judicious use of supplements' - a view that has gained support amongst many British nutrition experts.

An expert report published in 2014 for the European Commission identified micronutrient deficiency as a 'common problem in older adults'[15]. It pointed to gaps in existing research and advice but emphasised that: 'Above all, there is a need to provide better guidance on diet and nutrition for older people'. The report concluded that 'a set of age-specific, up-to-date dietary recommendations was essential to achieve active and healthy ageing.

However, working from the top down can only achieve so much. Age UK, in an important review of the evidence for healthy ageing, highlighted one of the key challenges for the preventive approach – public understanding and appreciation of the impact on the individual. 'Crucially, it is about persuading people of the healthy ageing argument. Only when we have managed this will they adapt or change their behaviour to adopt a healthier approach[16].'

MALNUTRITION – THE SILENT KILLER

UK experts have warned that 'malnutrition is alive and killing. It must be recognised as a disease in its own right'. The warning, from the Inaugural Conference of the European Nutrition for Health Alliance[17], comes as the costs of malnutrition continue to mount. Recent estimates suggest that malnutrition costs the UK economy costs and £13 billion in associated health and social care expenditure[18].

The human costs of malnutrition are of greater concern. A malnourished person sees their GP twice as often as someone who is well nourished, they are three times more likely to be admitted to hospital and, should they spend time in hospital, they are likely to stay three times longer than someone who is not malnourished.

More than half of older adults admitted to hospital in the UK are malnourished. The Malnutrition Task Force - an independent expert group which spans health, social care and local government - estimates that 1.3 million Britons who are 65 and older suffer from malnutrition, with most living in the community where they are unlikely to get the care they need.

However, introducing pathways of nutritional support for medium and high-risk patients could save lives as well as NHS resources. For example, routine use of the Malnutrition Universal Screening Tool (MUST) could deliver annual net savings of up to £229 million, primarily from reduced hospital admissions and length of hospital stay[19,20].

Malnutrition is defined as a state in which the deficiency of nutrients such as energy, protein, vitamins or minerals results in measurable adverse effects on the body. Malnutrition may refer to insufficient intake of protein, carbohydrate and fats (macronutrients) which can result in overly low BMI. It may also be insufficient intake of vitamins, minerals and other micronutrients, which can impact on overall health and could include obese individuals with poor diets.

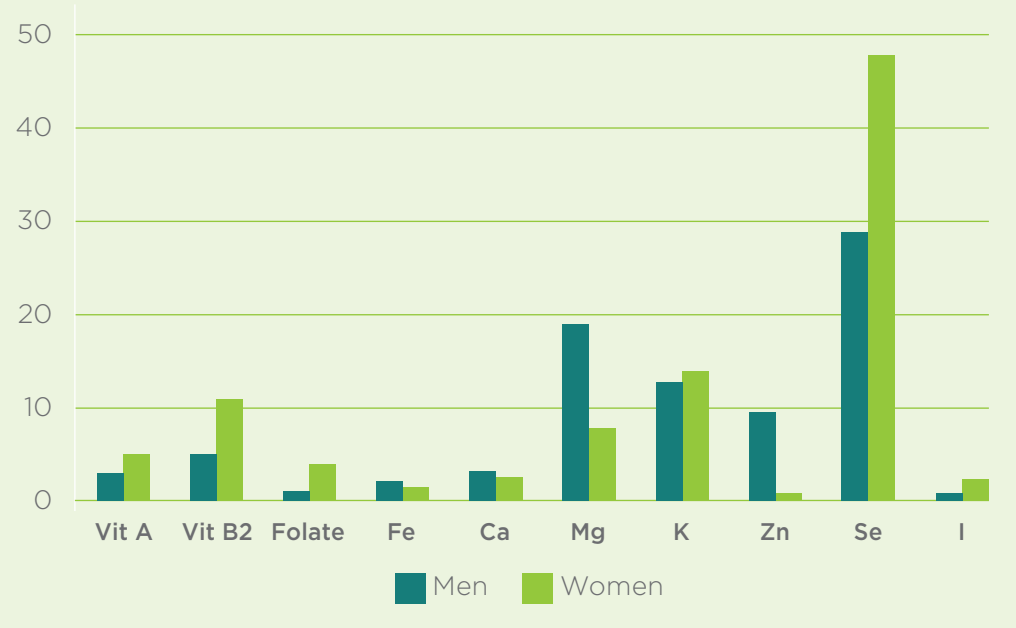
SECTION TWO: THE STATE OF THE NATION'S NUTRITION

While obesity, sugar and fat continue to dominate the news agenda, a surprising fact is that thousands of adults and young people in the UK fail to achieve adequate intakes of vitamins, minerals and omega-3 fatty acids, as defined by Dietary Reference Values.

High energy dense diets encourage calorie intakes that are not matched by increased energy expenditure, leading to an increased obesity risk. On top of this, the foodstuffs preferred and eaten by the majority of British adults – biscuits, cakes, soft drinks, chips, salty snacks and confectionery – tend to be poor sources of fibre and micronutrients. These less healthy options can make up 20-25% of daily energy intakes according to the National Diet and Nutrition Survey (NDNS)[21]. This has resulted in significant groups of people whose nutrient intakes fail to meet Lower Reference Nutrient Intakes (LRNI) – defined as a level of nutrition which only meets the needs of 2.5% of the population. Experts acknowledge that intakes which chronically fall below the LRNI are likely to increase the risk of deficiency. As Figure 1 shows, nutrients of concern in UK adults aged 65 years and older include vitamin A, vitamin B2 (riboflavin), folate in women, calcium, magnesium, potassium, zinc in men, selenium, and iodine in women.

Other work in central Europe suggests that iron deficiency anaemia is common in older age, especially among those aged 80 years and above. Although more European research is needed, low iron status has been linked with older age in the US where iron deficiency is seen in one in 10 adults aged over 65 years, one in five by the age

Figure 1: Percentage of older people with nutrient intakes below LRNI[22]



of 85 years, and 50-60% living in residential/nursing homes.

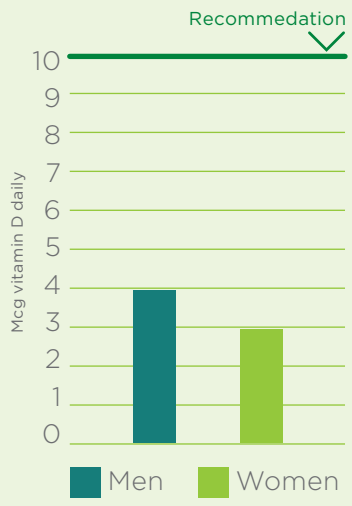
Poor diets may disproportionately affect low-income populations. The UK Low Income NDNS revealed that vitamin D intakes were 34% and 26% of the Reference Nutrient Intake (RNI) for older people. Selenium intakes were worryingly low amongst older women at 48% RNI, with most not meeting their nutritional requirements. There were also shortfalls in intakes of magnesium, potassium, zinc and copper intakes.

A study mapping the prevalence of micronutrient inadequacies across eight different European countries[23] found that over 90% of older people had inadequate vitamin D intakes. Indeed, vitamin D sufficiency is endemic as UK figures[24] show around 20% of all healthy adults and teenagers are clinically deficient (blood levels of 25-hydroxyvitamin D < 25 nmol/L), with the proportion highest amongst the housebound, lower socioeconomic groups and overweight people. Intakes in older people are worryingly low, at just under 4 mcg a day in men and less than 3 mcg in women[25] compared with the UK RNI of 10mcg for the over 65s[26].

Although vitamin D intakes are deficient across all age groups, the issue becomes critical with advancing age. Ageing reduces the skin's capacity to make the vitamin in response to exposure to sunlight's UVB rays - the most efficient source of vitamin D. The notoriously fickle appearance of the British summer, coupled with a lack of exposure to the right wavelength of UV light from October to April and overuse of sun cream, also contribute to deficits[27]. While a few foods, such as oily fish, eggs and red meat, naturally contain small quantities of vitamin D, these are eaten in relatively small amounts compared with vitamin D requirements, leading to progressive deficiency over the winter months. In addition, being overweight or obese lowers circulating levels of vitamin D due to fat sequestration (where fat soluble vitamins are trapped in fat cells). It is unclear how this affects the availability of vitamin D stores or health, although it is known that weight loss releases more vitamin D into the blood.

The chronic issue with vitamin D insufficiency has led national bodies, such as the UK Department of Health and NICE to recommend daily vitamin D supplements of 10 mcg for groups that are particularly vulnerable to vitamin D insufficiency,

Figure 2: Mean vitamin D intakes in older people[28] over 65 years of age



including adults over 65 years, the housebound, pregnant and lactating women, and people who cover their skins for cultural reasons. In addition, NICE recommends a consistent approach to recommending vitamin D supplements, better access to supplements, and wider availability of low cost products[29]. Evidence shows that only 40% of the over 65s take any type of supplement with the most popular supplement of choice being cod liver oil which is taken by around one-quarter of this population. Cod liver oil may contain vitamin D but not all other fish oils do; to top up other essential nutrients, it would be necessary to also take an additional multivitamin or vitamin D supplement.

A report from the UK Scientific Advisory Committee on Nutrition[30] recommended that everyone over the age of one should consume 10 mcgs of vitamin D daily, and all babies from birth to one year of age should consume between 8.5 – 10 mcgs daily[31]. This should be obtained from natural food sources, fortified foods and supplements[32]. On the basis of this, PHE[33] advised: 'In spring and summer, the majority of the population get enough vitamin D through sunlight on the skin and a healthy, balanced diet. During autumn and winter, everyone will need to rely on dietary sources of vitamin D. Since it is difficult for people to meet the 10 mcgs recommendation from consuming foods naturally containing or fortified with vitamin D, people should consider taking a daily supplement containing 10 micrograms of vitamin D in autumn and winter'. A draft report from the European Food Safety Authority went further by setting a daily recommendation of 15 mcg daily[34].

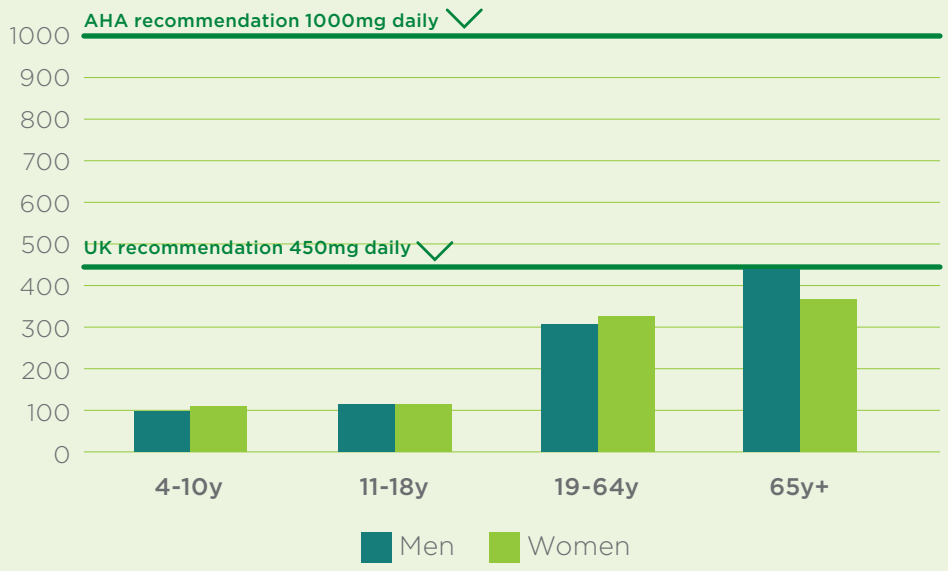
These recommendations, which encompass all population groups and raise the bar for vitamin D requirements, expose the challenge of encouraging people to achieve higher intakes. Evidence from the NDNS reveals that around 20% of the UK population is clinically deficient and around 75% has an insufficient intakes compared with the current EU labelling recommendation of only 5 mcg daily. This indicates a greater need for messages about supplementation alongside natural sources of vitamin D. The fact that PHE has taken the unprecedented step to recommend population-wide supplementation at certain times of the year highlights the great need for more vitamin D in the diet and recognition that even a normal diet cannot supply this reliably.

Other nutrients of concern are the long-chain omega-3 fatty acids, docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) which are consumed in amounts that fall well below the recommended 450 mg per day advised by SACN within their advice on oily fish consumption[35]. DHA and EPA are believed to have several health benefits including helping to prevent cardiovascular disease and cognitive decline, as well as having a proven role in eye health and immune function. Emerging evidence suggests a preventative role for long-chain omega-3 fatty acids in diabetes and inflammatory disorders, such as rheumatoid arthritis.

As shown in Figure 3, among older people aged 65+ years, men barely meet the recommendation for long-chain omega-3 fatty acids while women fare worse with average intakes of 380mg, according to a secondary analysis of the National Diet and Nutrition Survey (2012).

As 450 mg is a population average, it may be that older people require higher intakes of EPA and DHA to help prevent chronic disease. Notably, the American Heart Association recommends that people at risk of myocardial infarction (heart attack) consume 1000mg EPA and DHA daily which is well above current intakes in older people in the UK[36]. Intakes of oily fish have declined over the last few decades; nearly two out of three older people do not eat oily fish on a regular basis, rising to nine out of ten adolescents. These low intakes could be storing up health concerns in later life[37].

Figure 3: Average long-chain omega-3 intakes in older UK adults[38]



HEALTHY AGEING PANEL KEY POINTS

- The Panel was surprised at the high proportion of adults whose intakes fell below the LRNI for key vitamins and minerals. Many commented that the extent of vitamin D deficiency was shocking.
- It was acknowledged that older people often miss out on micronutrients which are known to be important for supporting healthier ageing.
- Several Panel members commented that current population dietary guidelines put too little emphasis on micronutrients and there were concerns that the new Eatwell Guide, which downgraded the importance of dairy foods and gave a clear meat reduction message, may encourage lower intakes of iron, iodine, selenium and calcium.
- It was agreed that healthy eating messages were not reaching people from lower socio-economic groups.

SECTION THREE: THE EVIDENCE FOR DIET AND HEALTHY AGEING

Good nutrition underpins good health and, arguably, health matters more with each passing year as the ageing process threatens our physical and mental wellbeing. However, food alone may not be enough for older individuals given that ageing can often bring ill health, increased requirements, reduced appetite, poor nutrient absorption, cognitive decline, poverty and mobility issues. The place for supplementation alongside dietary advice has become a topic of discussion amongst dietitians and other health professionals. Getting the right balance, and basing messages on good evidence, could help to support healthier ageing and make a real difference to quality of life. A review in the *Journal of Human Nutrition and Dietetics*[39] suggests that specific nutrients are showing promise as candidates to support healthy ageing, based on randomised controlled trials, and that targeted supplementation can help older people achieve recommended levels of these nutrients. Some of these points are discussed below.

Bone health

Bone density declines with increasing age, particularly in women, leading to an increased risk of fractures and osteoporosis. Clinical studies suggest that vitamin D and calcium working together, and possibly vitamin K, can slow bone loss and help to maintain bone density. Indeed, all of these three nutrients, plus vitamin C, magnesium, phosphorus and zinc, have authorised health claims relating to normal bone health. A few studies also suggest reductions in fractures, while vitamin D has an authorised health claim relating to reduction of falls in older people. Of interest are other research findings that suggest that men and women respond differently to vitamin D and calcium, indicating that different nutritional approaches may be required with advancing age[40].

'A six-month trial in 159 healthy post-menopausal women found that a daily supplement of 1200 mg calcium on top of usual dietary intake reduced markers of bone turnover'.

A six-month trial in 159 healthy post-menopausal women[41] found that a daily supplement of 1200 mg calcium on top of usual dietary intake reduced markers of bone turnover. Analysis of the Women's Health Initiative clinical trial which recruited 36,282 post-menopausal women, revealed that 1000 mg of calcium plus 10 mcg vitamin D3 was associated with a reduced risk of hip fracture[42]. Another study found that three years' of daily supplementation with 180 mcg vitamin K2 reduced age-related bone loss, with positive effects on bone strength[43].

Cognitive function

Micronutrients may be good for the ageing brain, with several studies reporting improved cognitive performance. A randomised control trial of 485 healthy adults aged 55 or older found those who took 900 mg of DHA for 24 weeks significantly

improved immediate and delayed verbal recognition memory scores[44]. Another trial found that participants who took 3000 mg of long-chain omega-3 fatty acids daily from fish oil daily experienced significant improvements in working memory[45], while a small study in adults with mild cognitive impairment found those given a combination of 1550 mg DHA plus 400 mg EPA for six months had significantly improved geriatric depression scores and self-reported physical health[46].

A two-year study of 900 adults aged 60 – 74 found that taking 400 mcg folic acid plus 100 mcg of vitamin B12 daily significantly improved immediate and delayed memory recall[47]. Similarly, a Cochrane Review[48] confirmed that vitamin B12 and folic acid significantly lowered blood levels of homocysteine, an amino acid associated with cognitive impairment and an increased risk of cardiovascular disease. Interestingly, MRI scans suggest that vitamin B12 slows the loss of brain volume which occurs with age, and which may be linked with dementia and other aspects of declining cognitive performance[49].

Eye health

With advancing age, especially beyond 75 years, an increasing prevalence of cataract, age-related macular degeneration, glaucoma, diabetic retinopathy and visual impairment can impact significantly on quality of life. Four studies examined the potential roles of fatty acids and micronutrients in relation to eye health. In one study[50], patients with dry eye disorders randomised to take a combined formulation of antioxidants and essential fatty acids had significantly lower levels of inflammatory chemicals associated with dry-eye disorders after 3 months.

Another study of DHA from tuna oil, given to older adults for 90 days, found significantly better visual acuity compared with the placebo group[51]. The most significant findings come from the long-running Age-Related Eye Disease Study (AREDS) which reported that antioxidants and zinc, taken in a daily supplement, significantly cut the risk of advanced age-related macular degeneration[52].

Immune function

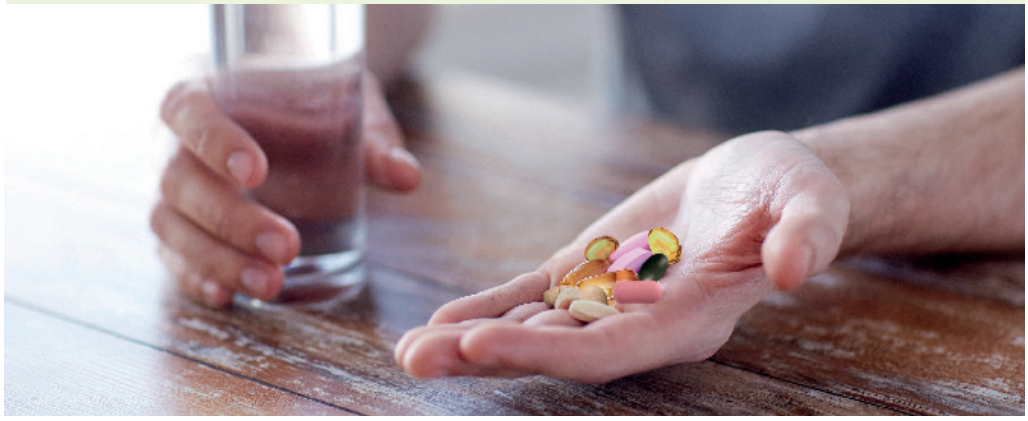
Although few studies have looked at the direct impact of nutrition on immune function, those that have been done suggest that long-chain omega-3 fatty acids and vitamin D3 modulate markers of inflammation, suggesting a potent anti-inflammatory effect[53]. In addition, the Zenith study found that modest levels of zinc supplementation of 15 mg a day maintained a balance of t-helper and t-lymphocyte cells and enhanced adaptive immunity[54]. Another study found a link between lower levels of omega-6 fatty acids, relative to omega-3 fatty acids, and longer telomeres - with shorter chromosome telomeres associated with faster biological ageing and risk of age-related disease[55].

In summary, there is emerging evidence that omega-3 fatty acids, B vitamins, vitamin D, vitamin K and calcium are the most promising nutrients to support healthy ageing. However, the variation in the quality

of trials noted by the authors of the *Journal of Human Nutrition and Dietetics* systematic review[56] suggests that more standardised research would be expected to provide clearer results, especially by targeting additional nutrients at those with lower baseline levels and ensuring that studies are long enough to see any changes in cognitive or physical decline. As the review concluded, there is a positive role for supplements, such as multivitamins, minerals and fish oils, alongside advice on healthy eating.

HEALTHY AGEING PANEL KEY POINTS

- The Panel acknowledged the beneficial role of supplements in studies which attempted to influence healthy ageing but agreed that, for the general population, supplementation should be appropriately targeted.
- There was a consensus that supplements which provided recommended amounts, i.e. Nutrient Reference Values in the EU, were preferable to high dose supplements, unless specifically advised by a health professional.
- The Panel debated the best time to introduce messages about nutrient adequacy with some favouring the adolescent years, or pregnancy, as times when people needed a stronger message or may be more receptive. Others favoured middle age as people might then be more focussed on maintaining health and wellbeing.



SECTION FOUR:
NUTRITIONAL STRATEGIES

The challenge of enhancing older people's health is exercising the minds of policymakers across the world. Yet the critical question of achieving optimal nutrition throughout life is being ducked, possibly because of the more urgent need to tackle the dual issues of obesity and hospital malnutrition.

The facts presented in this report show that older people's diets are lacking in key nutrients which could support healthy ageing, such as long-chain omega-3 fatty acids, B vitamins, vitamin D and several minerals. It is clear from randomised controlled trials that targeted supplementation helps to address micronutrient deficits with the aim of improving health outcomes. In addition, multivitamin use is both cost effective and simple, and can sit alongside traditional food-based dietary messages. Despite some concerns, there is no evidence that supplements are used as an alternative to healthy foods; indeed they appear to be used most often by those with better diets and regular use helps individuals to meet dietary targets[57]. Therefore, there does not have to be an 'either/or' situation as supplements can be part of a whole diet solution to poor nutrient intakes.

Research suggests that the most promising anti-ageing evidence lies with long-chain omega-3 fatty acids, B vitamins, vitamin D plus calcium, and zinc[58]. Multinutrient supplements are proven to increase blood levels of vitamins and minerals in older people[59], which helps to overcome the vexed issue of bioavailability left unaddressed in much current nutritional guidance.

The maxim of 'first do no harm' is manifestly apparent in the attitudes of health professionals towards supplementation. This is why it is important to stress that there is no evidence that taking supplements at recommended levels poses any risk of overdose since guideline safe upper levels are many times greater than NRVs. Where there are potential risks, the food supplements industry makes use of warning statements. For example, excess vitamin A is known to be a risk factor for teratogenic effects (birth defects). Therefore, food supplements containing more than 800Qg of vitamin A carry a warning statement directed at women who are pregnant, or who intend to become pregnant, to prevent any risk of over consumption. Food supplements designed for pregnant women do not contain the retinol form of vitamin A; they use the beta-carotene form as this substance does not carry the same risk.

HEALTHY AGEING PANEL KEY POINTS

- Food should always come first but supplements which provide lower doses – in line with NRVs – are a legitimate part of the self care agenda.
- Responsible promotion of food supplements should help to overcome pseudo medical messages, often seen in the media or on blogs, that vitamin and mineral supplements treat or cure diseases, for example cancer. The actual role of food supplements is to help individuals meet their dietary requirements.
- The Panel agreed that more consistent messages about diet, nutrient requirements and supplements should be given to the public and that these should come from qualified spokespeople, such as dietitians, nutritionists and other appropriate health professionals.

CONCLUSION

Registered dietitian and Panel chairman, Azmina Govindji, commented: 'We want food to come first, followed by the need to supplement an individual's nutritional intake, where necessary. Multi-vitamin and mineral supplements that provide amounts around the Nutrient Reference Values have benefits that support healthy ageing, and one a day is compatible with modern life.' Dr Carrie Ruxton, from the Health Supplements Information Service, said 'The take-home message is clear. Alongside a varied diet, supplements, such as a daily multivitamin, can provide an effective strategy for maintaining health, plugging nutrient gaps and helping to address the nutritional challenges associated with ageing.'

CONSENSUS OF OPINION: THE HEALTHY AGEING PANEL

- There is growing and compelling evidence that specific nutrients support healthy ageing which is why dietary recommendations should not just be focussed on macronutrients.
- The Panel agreed a 'food first' approach which puts an evidence-based healthy dietary pattern at the centre of any advice to the public.
- Food supplements which provide intakes around the recommended level have a role in helping individuals to meet their nutritional requirements. 'Recommended level' relates to Nutrient Reference Values (NRV) for micronutrients, and SACN guidance for long-chain omega-3 fatty acids and vitamin D.
- Higher intakes of nutrients may be warranted for at risk groups and should be part of advice from a health professional. Food and supplements should be part of this discussion.
- Year round supplementation messages should be targeted at groups vulnerable to insufficiency or deficiency, e.g. older people, those from lower socio-economic groups, housebound adults and people with darker skins in the case of vitamin D.
- The new advice from PHE to encourage routine supplementation with 10 mcg vitamin D in the autumn and winter for everyone over the age of one year is acknowledged.

Elaine Allerton, Mark Hollingsworth, Laura Wyness
Carrie Ruxton, Azmina Govindji, Emma Derbyshire

BREAKOUT ON HOW NUTRIENTS SUPPORT HEALTHY AGEING

NUTRIENTS	SUPPORT FOR HEALTHY AGEING
B vitamins	Cognitive function, lowering homocysteine levels for heart protection. Vitamin B12 deficiency common in older people
Vitamin A	Normal eye health and prevention of age-related macular degeneration, immune function
Vitamin D	Bone health (allied with calcium), immune function, muscle function and prevention of falls
Vitamin C and E	Antioxidants, vitamin C supports immune function and collagen for skin support
Calcium	Bone health, muscle function and blood pressure
Potassium	Normal blood pressure
Iodine	Normal thyroid function
Iron	Prevents tiredness and fatigue, vital for red blood cells
Zinc	Activates t-cells which help fight infection
Selenium	Antioxidant linked with cancer prevention

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