CELL WELLBEING

A GUIDE TO FUNCTIONAL NUTRITION

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INDEX

VITAMINS SOME OF THEIR PRIMARY FUNCTIONS

VITAMIN A

(Retinol)¦ Function¦ Essential for vision, immune system support, skin health, and proper functioning of organs like the heart and lungs,

VITAMIN B1

(Thiamine)¦ Function¦ Helps convert food into energy, supports nerve function, and plays a role in muscle contractions,

VITAMIN B2

(Riboflavin)¦ Function¦ Necessary for energy production, helps maintain healthy skin,eyes, and nerve functions,

VITAMIN B3

(Niacin) Function¦ Supports DNA repair, aids in energy metabolism, and helps maintain healthy skin and nerves,

VITAMINS FUNCTIONS

VITAMIN B5

Pantothenic Acid)¦ Function¦ Involved in the synthesis of fatty acids and supports energy production from food,

VITAMIN B6

(Pyridoxine)¦ Function¦ Important for brain development and function, helps produce neurotransmitters, and aids in red blood cell formation,

VITAMIN B7

(Biotin)¦ Function¦ Essential for metabolism of fatty acids, amino acids, and glucose; supports healthy hair, skin, and nails,

VITAMIN B9

(Folate/Folic Acid)¦ Function¦ Crucial for DNA synthesis and cell growth; important during pregnancy for fetal development,

VITAMIN B12

(Cobalamin)¦ Function¦ Required for red blood cell formation, neurological function, and DNA synthesis,

VITAMIN C

C (Ascorbic Acid)¦ Function¦ Acts as an antioxidant, supports the immune system, aids in collagen formation, and helps with iron absorption,

VITAMIN D

(Calciferol)¦ Function¦ Essential for bone health,regulates calcium absorption, and plays a role in immune function,

VITAMIN E

(Tocopherol)¦ Function¦ Acts as an antioxidant, protects cells from damage, and supports immune function,

VITAMIN K

(Phylloquinone)¦ Function¦ Essential for blood clotting and bone metabolism,

VITAMIN P

(Bioflavonoids, often considered part of Vitamin C)¦ Function¦ Works with Vitamin C to strengthen blood vessels and support the immune system,

VITAMIN Q

Coenzyme Q10 or Ubiquinone)¦ Function¦ Helps generate energy in cells and acts as an antioxidant,

VITAMIN T

(Tocotrienols, a form of Vitamin E)¦ Function¦ Antioxidant properties and potential heart health benefits,

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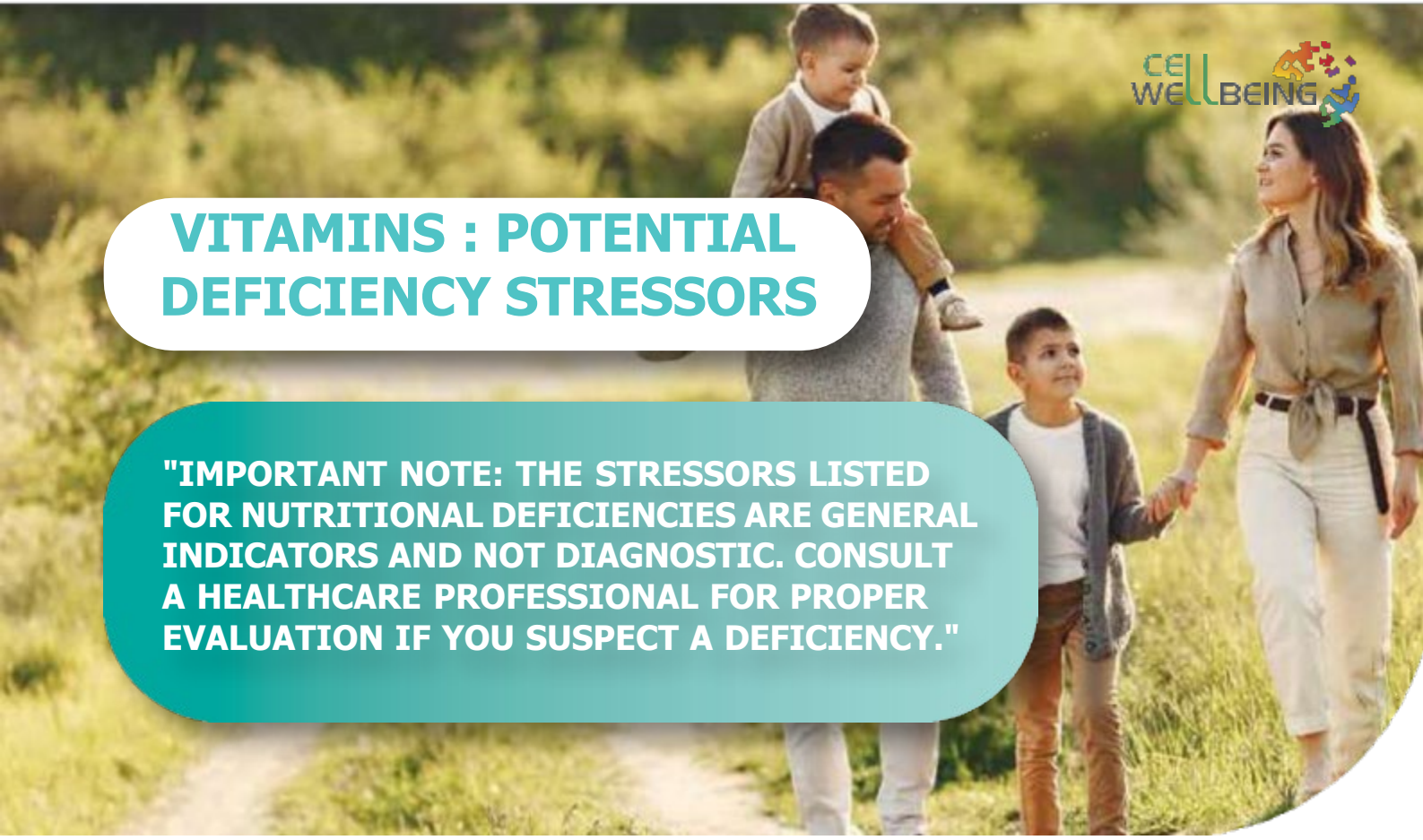

VITAMINS : POTENTIAL DEFICIENCY STRESSORS

"IMPORTANT NOTE: THE STRESSORS LISTED FOR NUTRITIONAL DEFICIENCIES ARE GENERAL INDICATORS AND NOT DIAGNOSTIC. CONSULT A HEALTHCARE PROFESSIONAL FOR PROPER EVALUATION IF YOU SUSPECT A DEFICIENCY."

VITAMIN A

(Retinol)¦ Poor Night Vision, Dry, rough skin,Reduced immune function, Impaired wound healing

VITAMIN B1

(Thiamine)¦ Fatigue, Muscle weakness, Cognitive impairment

VITAMIN B2

(Riboflavin)¦ Sore throat, Red OR itchy eyes, Cracked lips, Inflamed tongue

VITAMIN B3

(Niacin)¦ dermatitis, diarrhoea, dementia, Fatigue, Headaches, Memory problems

VITAMIN B5

(Pantothenic Acid)¦ Fatigue, Irritability, Nausea, Muscle cramps

VITAMIN B6

(Pyridoxine)¦ Anemia, Skin rashes, Depression, Nervous abnormalities

VITAMIN B7

(Biotin)¦ Hair loss, Skin rashes, Depression, Brittle nails

VITAMIN B9

(Folate/Folic Acid)¦ Anaemia, Fatigue, Reduced immune function

VITAMIN B12

(Cobalamin)¦ Function¦ Required for red blood cell formation, neurological function, and DNA synthesis,

VITAMIN C

(Ascorbic Acid)¦ bleeding gums, joint pain, fatigue, Slow wound healing, Frequent infections, Dry, scaly skin

VITAMINS : POTENTIAL DEFICIENCY STRESSORS

VITAMIN D

Calciferol)¦ Weakened bones, Muscle weakness, Mood disturbances

VITAMIN E

(Tocopherol)¦ Muscle weakness, Impaired coordination

VITAMIN K

(Phylloquinone)¦ Excessive bleeding & or easy bruising, Delayed blood clotting

VITAMIN P

(Bioflavonoids, often considered part of Vitamin C)¦ Weakened capillaries,Increased susceptibility to bruising, Swollen or painful legs (varicose veins)

VITAMIN Q

(Coenzyme Q10 or Ubiquinone)¦ Function¦ Helps generate energy in cells and acts as an antioxidant, VITAMIN T (Tocotrienols, a form

VITAMIN T

(Tocotrienols, a form of Vitamin E)¦ Research on specific deficiency symptoms is limited; it is primarily known for its antioxidant properties,

Vitamins : Nutritional Sources

BETAINE

Wheat bran, beets, spinach, kamut, sweet potatoes, beef, turkey, veal,

BIOTIN

Eggs, cheese, salmon, avocados, whole flour,raspberries, cauliflower,

INOSITOL

Wheat germ, brown rice, citrus fruits, nuts, green leafy veggies, molasses, soy flour,

VITAMIN A1

Eggs, milk, liver, along with orange, yellow and green veggies,

VITAMIN B1

Beans, nuts, seeds, spirulina, whole grains such as oats and barley,

VITAMIN B12

Beef, salmon, herring, mackerel, Greek yogurt,

VITAMIN B2

Meat, cheese, eggs, green leafy veggies, nuts, beans and legumes,

Vitamins : Nutritional Sources

VITAMIN B3

Chicken, tuna, sunflower seeds, beef, salmon,

VITAMIN B5

Liver, avocado, sunflower seeds, mushrooms, eggs, salmon, lentils,

VITAMIN B6

Turkey, beef, pistachio nuts, tuna, pinto beans,avocado, chicken, molasses,

VITAMIN B9

Spinach, black eyed peas, brussel sprouts, romaine lettuce, broccoli, beef liver,

VITAMIN K1 & K2

K1 - green leafy veggies,
K2 - fermented foods, meats and dairy,

VITAMIN C

Guava, black current, red and green pepper,

VITAMIN D3

Sunlight, halibut, carp, eel, portobello mushrooms, sardines, raw milk,

VITAMIN E

Sunflower seeds, almonds, wheat germ,avocado, mango, squash, broccoli, spinach,

MINERALS SOME OF THEIR PRIMARY FUNCTIONS

CALCIUM

Function¦ Vital for strong bones and teeth, blood clotting, muscle function, and nerve transmission,

CHROMIUM

Function¦ Important for the formation of red blood cells, bone health, and the function of enzymes,

COPPER

Function¦ Important for the formation of red blood cells, bone health, and the function of enzymes,

COBALT

Function¦ Required for the formation of vitamin B12, which is essential for red blood cell production and nerve function,

FLUORIDE

Function¦ Promotes dental health by strengthening tooth enamel,

IODINE

Function¦ Necessary for the production of thyroid hormones, which regulate metabolism,

MINERAL FUNCTIONS

IRON

Function¦ Essential for the production of red blood cells and oxygen transport in the body,

MANGANESE

Function¦ Supports bone formation, metabolism, and antioxidant defenses,

MAGNESIUM

Function¦ Important for muscle and nerve function, bone health, and energy metabolism,

MOLYBDENUM

Function¦ Necessary for the function of certain enzymes involved in the metabolism of sulfur-containing amino acids,

PHOSPHORUS

Function¦ Works with calcium for bone and teeth formation, involved in energy metabolism, and supports cell function,

POTASSIUM

Function¦ Regulates fluid balance, supports nerve and muscle function, and helps maintain normal blood pressure,

SODIUM

Function¦ Critical for fluid balance, nerve signaling, and muscle contractions,

SELENIUM

Function¦ Acts as an antioxidant, helps protect cells from damage, and supports the immune system,

SULFUR

Function¦ Important for the structure of amino acids and proteins, as well as detoxification processes,

ZINC

Function¦ Supports immune function, wound healing, and DNA synthesis,

VITAMINS POTENTIAL DEFICIENCY STRESSORS

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CALCIUM

Weakened bones, Muscle cramps, Numbness or tingling in extremities, weakened teeth

CHROMIUM

Insulin resistance, Elevated blood sugar levels, Fatigue, Poor glucose control

COPPER

Anaemia, Osteoporosis, Fatigue, Impaired immune function

COBALT

Cobalamin (Vitamin B12) deficiency due to its role as a B12 cofactor, Anaemia, Neurological problems

FLUORIDE

Increased risk of dental cavities, Skeletal fluorosis (excessive long-term exposure)

IODINE

enlarged thyroid gland, Hypothyroidism (underactive thyroid), Cognitive impairment, Fatigue

IRON

Anaemia, Osteoporosis, Fatigue, Impaired immune function

MANGANESE

Poor bone formation (rare deficiency), Muscle weakness Impaired growth in children Neurological symptoms (rare)

MINERALS POTENTIAL DEFICIENCY STRESSORS

MAGNESIUM

Muscle cramps and spasms, Irregular heartbeat (arrhythmia), Fatigue, Nervous system abnormalities

MOLYBDENUM

Rare deficiency symptoms include neurological problems and developmental delays,

PHOSPHORUS

Bone and muscle weakness, Reduced appetite, Irregular breathing

POTASSIUM

Muscle weakness or cramps, Irregular heartbeat, Fatigue, Nervous system abnormalities

SODIUM

Muscle cramps, Low blood pressure, Nausea and vomiting, Confusion and lethargy

SELENIUM

Muscle weakness, Fatigue, Cognitive decline, Compromised immune function

SULPHUR

There are no specific symptoms of sulphur deficiency since it's abundant in most diets,

ZINC:

Impaired immune function, Delayed wound healing, Skin rashes, Reduced sense of taste and smell

MINERALS : Nutritional Sources

BORON
Dark green veggies,
legumes, nuts and seeds,

CALCIUM
Green leafy veggies,
unrefined grains,
oranges, tofu, seeds/nuts,

CHROMIUM
Whole grains, molasses,
fish, mushrooms,
broccoli, grapes, yeast,

COPPER
Green leafy veggies,
almonds, shellfish,seeds

IODINE
Nuts, seeds, green leafy
veggies, shellfish, whole
grains, bananas,

IRON
Dark green veggies,
legumes, dried fruits
blackberries, cherries,,

LITHIUM
Pulses (legumes), lentils,
pistachios, soy beans
and chickpeas,

MAGNESIUM
Avocados, almonds, whole
grains,grapefruit, spinach, fish,

MINERALS : Nutritional Sources

MANGANESE

Nuts, seeds, avocados, apricots, grapefruit, sweet potato,

MOLYBDENUM

Legumes, whole grains, nuts and seeds,

PHOSPHORUS

Barley, beans, fish, lentils, dark green leafy veggies, coconut,

POTASSIUM

Fruits/veggies, bananas, beans, almonds,whole grains, papaya,

SELENIUM

Brazil nuts, bran, whole grains, tuna, broccoli, onions, green veggies,

SILICON

Red wine, raisins, whole grains, bran, root vegetables, spinach, seafood,

SODIUM

Seeds, strawberry, melons, figs, sea asparagus, okra, celery,

SULFUR

Cabbage, onions, garlic, leeks, avocado, strawberries, cucumber, peaches,

AMINO ACIDS SOME OF THEIR PRIMARY FUNCTIONS

AMINO ACIDS ARE THE BUILDING BLOCKS OF PROTEINS AND PLAY CRUCIAL ROLES IN VARIOUS BODILY FUNCTIONS, INCLUDING PROTEINSYNTHESIS, ENZYME PRODUCTION, NEUROTRANSMITTER REGULATION,AND MANY OTHER PHYSIOLOGICAL PROCESSES. WHILE THE BODY CAN PRODUCE SOME AMINO ACIDS, IT RELIES ON DIETARY SOURCES FOR ESSENTIAL AMINO ACIDS, MAKING A BALANCED DIET IMPORTANT FOR OVERALL WELLBEING.

ALANINE

Function¦, glucose metabolism and energy production,

ARGININE

Function¦ Involved in Important for cardiovascular support, immune function, wound healing, and hormone regulation,

ASPARAGINE

Function¦ Aids in the synthesis of proteins and nucleotides,

ASPARTIC ACID

Function¦ Involved in the citric acid cycle and protein synthesis,

CYSTEINE

Function¦ May become essential during times of oxidative stress or when the diet lacks adequate cysteine sources, Important for the formation of disulphide bonds in proteins and antioxidant production

GLUTAMIC ACID

Function¦ Acts as a neurotransmitter, important for brain function,

GLUTAMINE

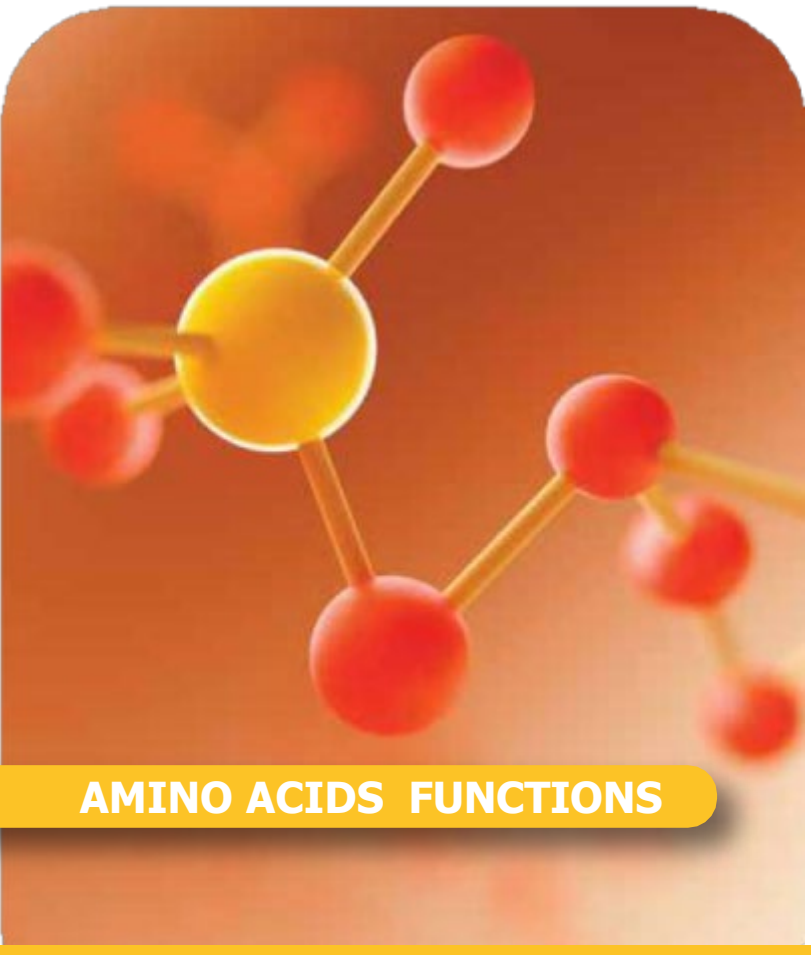
Function¦ Supports immune function and gut health; important for protein synthesis,

GLYCINE

Function¦ Involved in the synthesis of nucleotides, collagen, and other important molecules,

HISTIDINE

Function¦ Precursor to histamine; important for growth, tissue repair, and red and white blood cell production,



ISOLEUCINE

Function¦ Precursor to neurotransmitters and hormones, including dopamine and thyroid hormones,

LEUCINE

Function¦ Precursor to histamine; important for growth, tissue repair, and red and white blood cell production,

LYSINE

Function¦ Essential for collagen formation, calcium absorption, immune function, and enzyme production,

METHIONINE

Function¦ Required for protein synthesis,methylation reactions, and antioxidant production,

PHENYLALANINE

Function¦ Precursor to tyrosine, important for the production of neurotransmitters and hormones, PROLINE¦ Function¦ Important for collagen and connective tissue formation,

SERINE

Function¦ Plays a role in protein synthesis and the synthesis of other amino acids and molecules,

THREONINE

Function¦ Supports immune function, protein synthesis, and collagen production,

TRYPTOPHAN

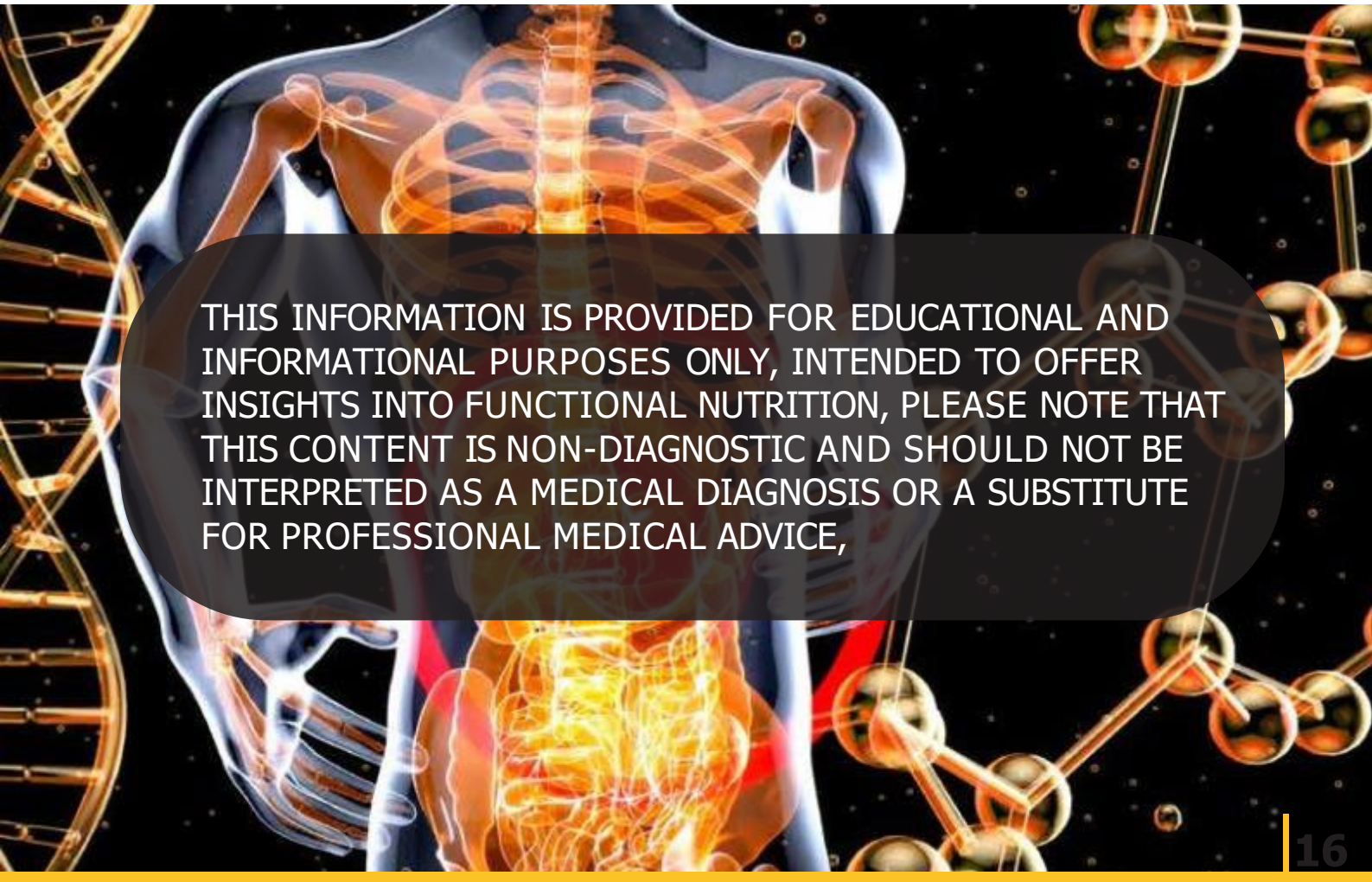
Function¦ Precursor to serotonin (mood regulation) and niacin (vitamin B3),

TYROSINE

Function¦ Precursor to neurotransmitters and hormones, including dopamine and thyroid hormones,

VALINE

Function¦ Important for muscle coordination, repair, and growth, as well as energy production,



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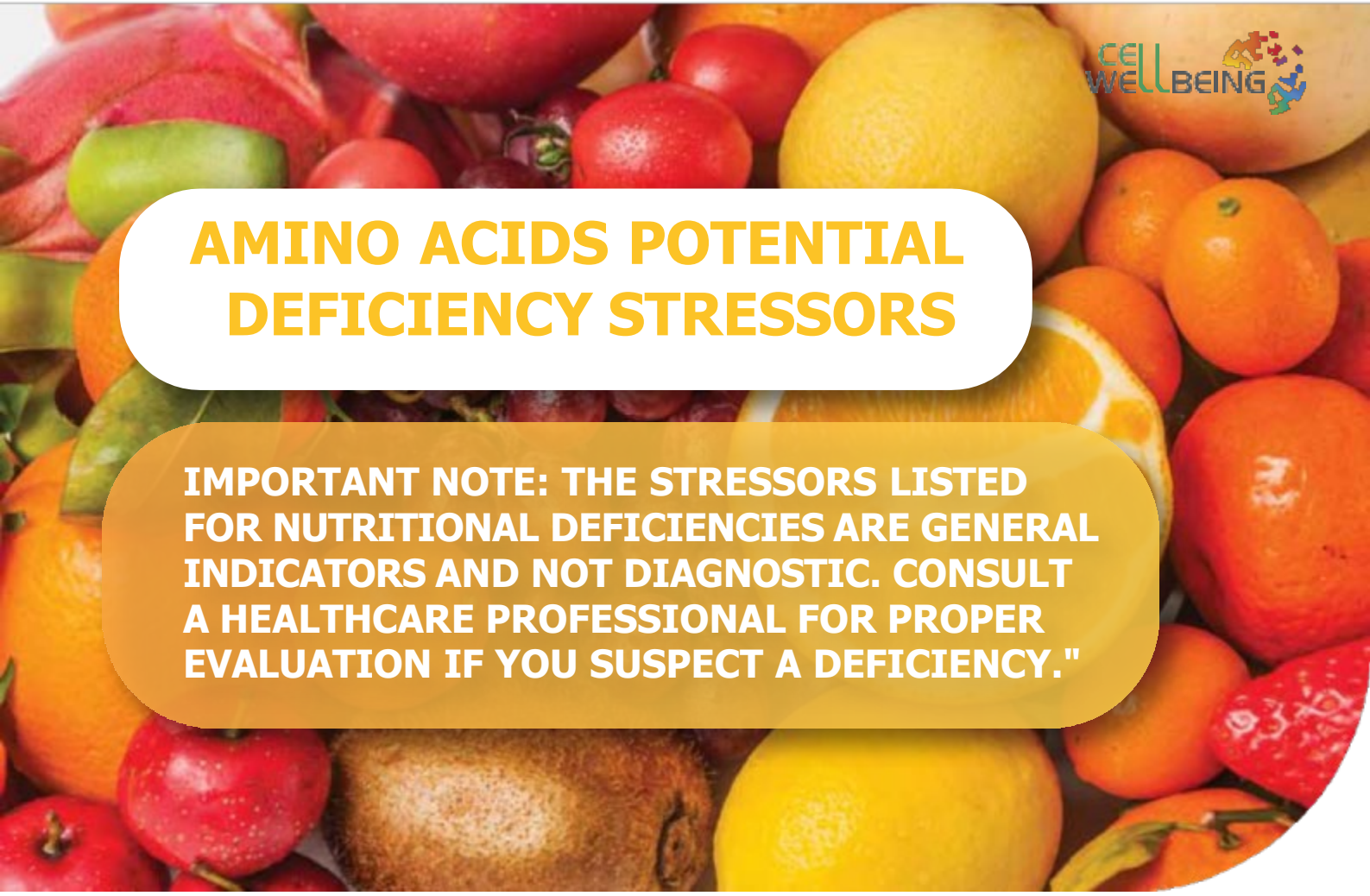

AMINO ACIDS POTENTIAL DEFICIENCY STRESSORS

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ALANINE

Fatigue, Muscle weakness, Changes in blood sugar regulation

ARGININE

Poor wound healing, Impaired immune function, Cardiovascular issues

ASPARAGINE

Cognitive impairment, Fatigue, Weakened immune response

ASPARTIC ACID

Fatigue, Changes in mood and behaviour, Cognitive impairment

CYSTEINE

Reduced ability to synthesize glutathione (an important antioxidant),Vulnerability to oxidative stress, Impaired detoxification system,

GLUTAMIC ACID

Cognitive impairment, Changes in mood and behaviour, Poor memory

GLUTAMINE

Muscle wasting, Impaired immune function, Gastrointestinal issues

GLYCINE

Cognitive impairment, Sleep disturbances, Reduced collagen production

HISTIDINE

Cognitive impairment,
Skin rashes and allergies,
Impaired digestion

ISOLEUCINE

Fatigue, Muscle weakness,
Poor blood sugar control

LEUCINE

Muscle wasting, Fatigue,
Poor wound healing

LYSINE

Fatigue, Anaemia
(in rare deficiency cases),
Impaired growth (in children)

METHIONINE

Muscle weakness,
Poor nail and hair health,
Increased susceptibility
to oxidative stress

PHENYLALANINE

Cognitive impairment,
Behavioral changes,
Skin rashes

PROLINE

Joint and skin issues,
Reduced collagen production,
Gastrointestinal problems

SERINE

Cognitive impairment,
Poor immune function,
Reduced creatine synthesis

THREONINE

Digestive issues, Cognitive
impairment Skin disorders

TRYPTOPHAN

Mood disturbances,
Sleep disturbances,
Cognitive impairment

TYROSINE

Mood disturbances,
Cognitive impairment,
Skin and hair issues

VALINE

Muscle weakness,
Poor coordination, Fatigue

AMINO ACIDS NUTRITIONAL SOURCES

ALANINE

Spirulina, turkey, fish, poultry, egg whites, seaweed, sesame seeds

ARGININE

Beef, chicken, fish, nuts, whole grains, avocados, chocolate, cottage cheese

ASPARAGINE

Beef, chicken, dairy, seafood, asparagus, soy, eggs

ASPARTIC ACID

Beef, clams, bacon, seafood, poultry, cheese, sesame seeds, cottage cheese

CARNITINE

Beef, chicken, dairy, avocado, seeds

CARNOSINE

Edamame, asparagus, mushrooms, spirulina, watercress, seaweed

CITRULLINE

Watermelon, onions, garlic, legumes, salmon, meat, liver

CYSTEINE

Chicken, turkey, duck, yogurt, eggs, sunflower seeds, nuts

GLUTAMIC ACID

Seafood, cheese, beef, veal

AMINO ACIDS NUTRITIONAL SOURCE

GLUTAMINE

Meats, nuts, seeds,
eggs, asparagus, cabbage

GLUTATHIONE

Spinach, broccoli, tomatoes,
grapefruit,apples, avocado,
asparagus

GLYCINE

Spirulina, green leafy vegetables,
cauliflower, pumpkin, bananas,
meat, poultry, eggs and fish,

HISTIDINE

Beef, lamb, cheese, pork,
chicken, soy,fish, nuts, seeds,
eggs, beans, whole grains

ISOLEUCINE

Pork, beef, chicken, cheese,
wheat germ, legumes,
seeds, spinach

LEUCINE

Seeds, pork, beef, chicken,
cheese, fish, beans, sweet
potatoes, spinach, mushrooms

LYSINE

Eggs, beans, lentils, beef,
chicken, fish, cheese, spinach,
avocado, parsley, beans

METHIONINE

Meat, eggs, dairy, seeds,
legumes, cottage cheese,
spirulina, couscous, oatmeal

AMINO ACIDS NUTRITIONAL SOURCE

ORNITHINE

Meats, poultry, fish, eggs, soybeans, quinoa

PHENYLALANINE

Spirulina, chicken, fish, meat, eggs,cheese, dairy, asparagus, nuts, spinach

PROLINE

Cheese, poultry, tuna, fish, soybeans, cabbage, yogurt, egg whites, soy sauce, parsley

SERINE

Soybeans, fish, cheese, beef, poultry

TAURINE

Beef, lamb, chicken, eggs, dairy, seaweed, krill

THREONINE

Spirulina, beef, pork, fish, cottage cheese, eggs, spinach, cabbage, nuts

TRYPTOPHAN

Turkey, spirulina, chicken, nuts, mushrooms, pork, seeds, mushrooms, dairy

TYROSINE

Cheese, fish, pork, poultry beans, oatmeal, spinach, nuts, seeds

VALINE

Cheese, beef, lamb, nuts, sees, mushrooms, pork, sweet potatoes, spinach, avocado

ANTIOXIDENTS SOME OF THEIR PRIMARY FUNCTIONS

ANTIOXIDANTS PLAY CRUCIAL ROLES IN PROTECTING CELLS AND TISSUES FROM OXIDATIVE STRESS CAUSED BY FREE RADICALS SUCH AS WI FI OR MOBILE PHONE ELECTRICAL WAVE FORMS , WHICH CAN CONTRIBUTE TO VARIOUS WELLNESS STRESSORS,

ALPHA-LIPOIC ACID

Function¦ A potent antioxidant that can regenerate other antioxidants like vitamins C and E, supports energy metabolism, and helps maintain healthy skin,

BILIRUBIN

Function¦ Produced during the breakdown of red blood cells, bilirubin acts as an antioxidant and helps remove harmful free radicals from the body,

CATALASE

Function¦ An enzyme that helps break down hydrogen peroxide, a harmful by product of metabolism, into water and oxygen, reducing oxidative stress,

COENZYME Q10

(COQ10 OR UBIQUINONE)

Function¦ Essential for energy production within cells and acts as an antioxidant to protect mitochondria from oxidative damage,

GLUTATHIONE

Function¦ A powerful antioxidant that helps protect cells from oxidative damage, supports the immune system, and plays a role in detoxification processes,

MELATONIN

Function¦ Primarily known for its role in regulating sleep, melatonin also acts as an antioxidant and helps protect cells from oxidative stress,

POLYPHENOLS
(COQ10 OR UBIQUINONE)

Function¦ Found in foods like red wine and berries, polyphenols have antioxidant properties and may help protect cells from oxidative damage, supporting heart and brain health,

SELENIUM

Function¦ Acts as a cofactor for antioxidant enzymes, such as glutathione peroxidase, and helps protect cells from oxidative stress,

SUPEROXIDE DISMUTASE (SOD)

Function¦ An enzyme that converts superoxide radicals into less harmful molecules, reducing oxidative damage to cells,

ANTIOXIDENTS FUNCTIONS

ANTIOXIDENTS FUNCTIONS

VITAMIN A
(RETINOL)

Function¦ Essential for vision, supports immune function, and acts as an antioxidant to protect cells and tissues

VITAMIN C
(ASCORBIC ACID)

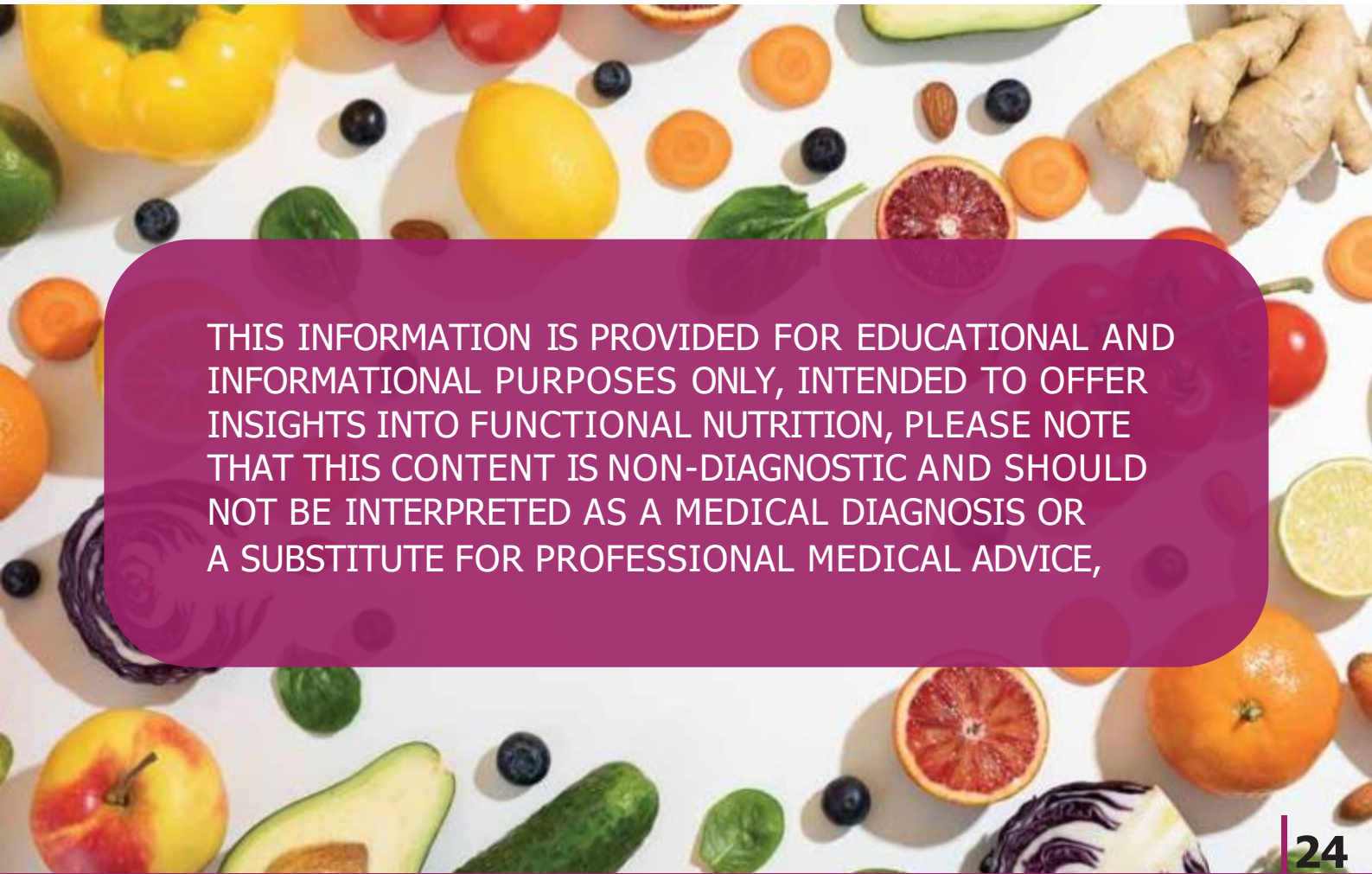
Function¦ Acts as an antioxidant, protecting cells from free radicals, supports immune function, and helps regenerate other antioxidants like vitamin E,

VITAMIN E
(TOCOPHEROL)

Function¦ Protects cell membranes from oxidative damage, works alongside vitamin C to neutralize free radicals, and supports skin health,

ZINC

Function helps maintain the body's overall antioxidant defence system by supporting the function of various antioxidant enzymes and molecules,



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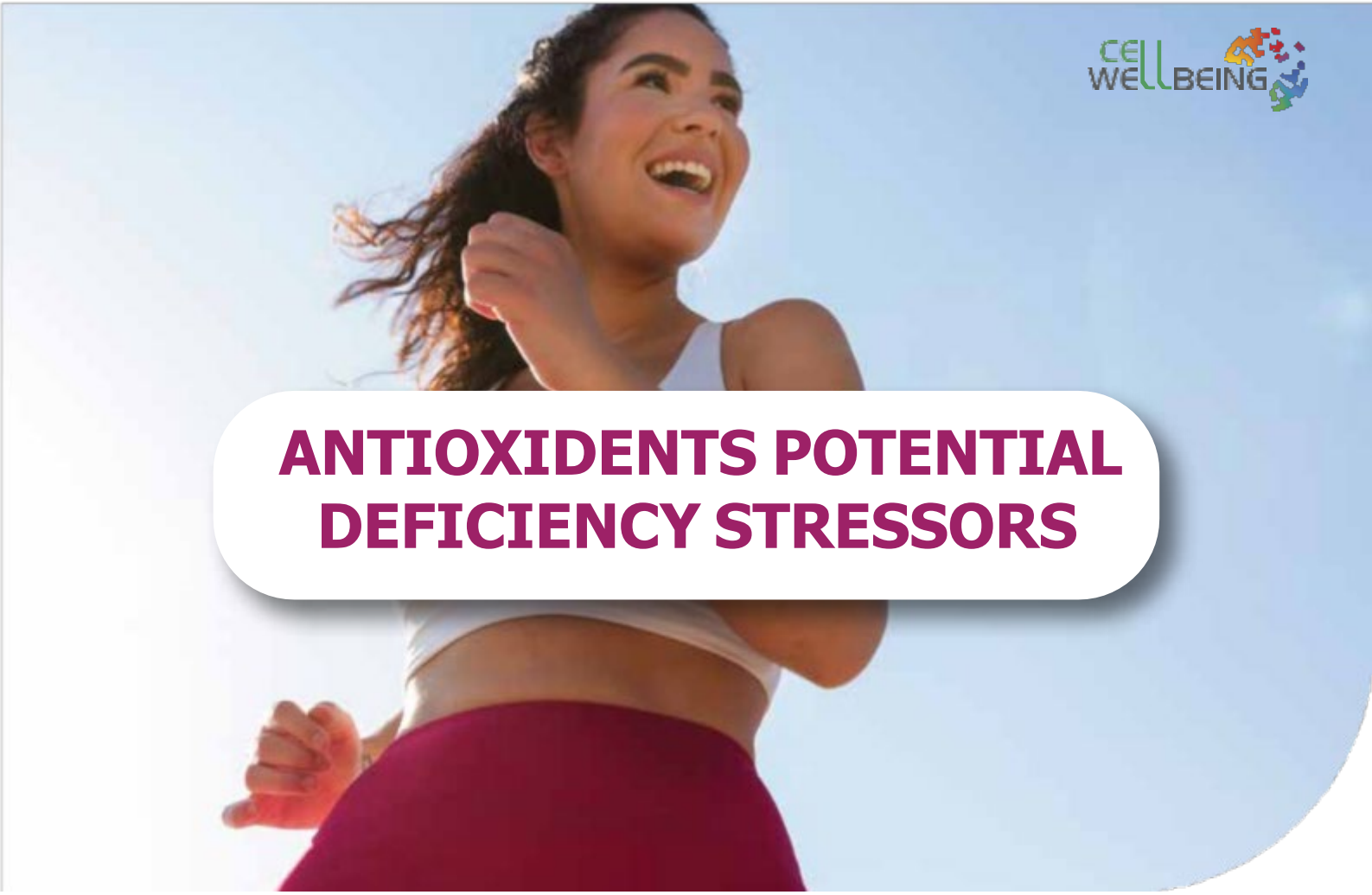


ANTIOXIDENTS POTENTIAL DEFICIENCY STRESSORS

ALPHA-LIPOIC ACID

Diminished protection against oxidative stress, Impaired regulation of glucose Nerve damage (neuropathy)

CATALASE

Reduced ability to neutralize hydrogen peroxide, resulting in oxidative stress, Increased susceptibility to oxidative stress,

BILIRUBIN

Elevated bilirubin levels may signal liver or gallbladder issues, Jaundice (yellowing of the skin and eyes) can manifest with high bilirubin levels,

COENZYME Q10

(COQ10 OR UBIQUINONE)

Fatigue and muscle weakness, Compromised cardiovascular wellness, weakened defence against oxidative dstress, Glutathione¦ Decreased detoxification capability, Heightened vulnerability to oxidative stress Impaired immune function

GLUTATHIONE

Decreased detoxification capability, Heightened vulnerability to oxidative stress Impaired immune function

MELATONIN

Disturbed sleep patterns, Altered daily rhythms

POLYPHENOLS

(COQ10 OR UBIQUINONE)

Reduced safeguard against oxidative stress, Potential cardiovascular advantages, Possible anti-inflammatory effects,

SELENIUM

Impaired immune function, Enhanced susceptibility to oxidative harm, Thyroid dysfunction

SUPEROXIDE DISMUTASE (SOD)

Greater vulnerability to oxidative stress, Potential inflammation and tissue damage

VITAMIN A

(RETINOL)

Night blindness, Dry, rough skin, Diminished immune function

VITAMIN C

(ASCORBIC ACID)

Heightened susceptibility to infections, Slower wound healing, Fatigue and muscle weakness,

VITAMIN E

(TOCOPHEROL)

Greater susceptibility to oxidative stress, Skin issues (e,g,, dryness, dermatitis)

ZINC

Impaired immune function, Delayed wound healing Skin issues,

ANTIOXIDENTS POTENTIAL DEFICIENCY STRESSORS

ANTIOXIDANTS NUTRITIONAL SOURCES

ALPHA LIPOIC ACID

Broccoli, spinach, red meat, brussel sprouts, tomatoes, Brewer's yeast, beets, carrots,

ANTHOCYANIDINS

Berries, kidney beans, tart cherry, grapes, red onion, pomegranates, tomatoes,

CAROTENOIDS

Red,green,orangeandyellowfruits and veggies, algae, chlorella ,spirulina,

CO-ENZYME Q10

Beef,herring,chicken,trout, pistachios,seeds, broccoli, eggs, oranges, strawberries,

FLAVONOIDS

Citrus fruits, berries, dried beans, dark chocolate, wine,

PHYTOESTROGEN

Tempeh, oats, barley, lentils, yams, apples alfalfa, pomegranates,wheat germ

POLYPHENOLS

Spices, herbs, green tea, dark berries, veggies,nuts ,seeds,chocolate,

ANTIOXIDANTS NUTRITIONAL SOURCES

SELENIUM

Brazil nuts, eggs, tuna , cod, sunflower seeds,poultry andcertaintypesof meat,

SULFORAPHANE

Broccoli, brussel spro ut s, kale, cauliflower,cabbage,

SUPEROXIDE DISMUTASE

Cantaloupe , honeydew, broccoli, Brussel sprouts, oysters, chicken, chickpeas, cashew nuts,,

VITAMIN C

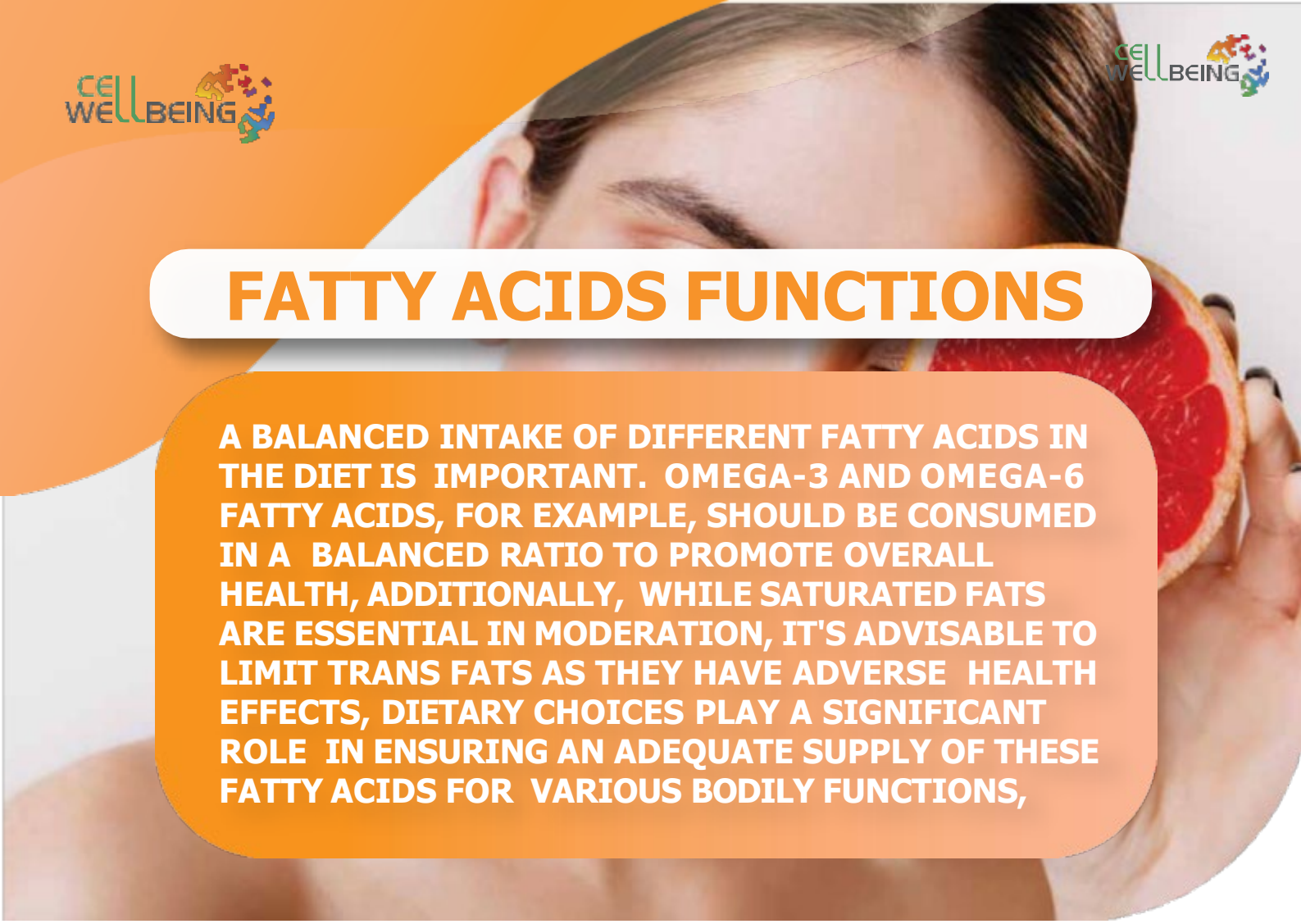
Guava, kiwi, black currant , red & green peppers, oranges, strawberries, papaya, kale,

VITAMIN E

Sunflower seeds, almonds, hazel nuts, mango, avocado, broccoli, spinach, Tomato,

ZINC

Lamb, pumpkin seeds, chickpeas, cocoa powder, kefir, cashews, mushrooms, spinach,



FATTY ACIDS FUNCTIONS

A BALANCED INTAKE OF DIFFERENT FATTY ACIDS IN THE DIET IS IMPORTANT. OMEGA-3 AND OMEGA-6 FATTY ACIDS, FOR EXAMPLE, SHOULD BE CONSUMED IN A BALANCED RATIO TO PROMOTE OVERALL HEALTH, ADDITIONALLY, WHILE SATURATED FATS ARE ESSENTIAL IN MODERATION, IT'S ADVISABLE TO LIMIT TRANS FATS AS THEY HAVE ADVERSE HEALTH EFFECTS, DIETARY CHOICES PLAY A SIGNIFICANT ROLE IN ENSURING AN ADEQUATE SUPPLY OF THESE FATTY ACIDS FOR VARIOUS BODILY FUNCTIONS,

ALPHA-LINOLENIC ACID (ALA)

IS AN ESSENTIAL OMEGA-3 FATTY ACID

Function Cardiovascular Health¦ ALA has been associated with cardiovascular benefits, It can help reduce the risk of heart disease by lowering levels of triglycerides, improving blood vessel function, and reducing inflammation within the cardiovascular system, Anti-Inflammatory

BUTYRIC ACID, PROPIONIC ACID, ACETIC ACID, SHORT-CHAIN FATTY ACIDS

Function¦ These fatty acids are produced by the gut microbiota during the fermentation of dietary fiber, They play a role in maintaining gut health, supporting the intestinal lining, and influencing metabolic processes,

FATTY ACIDS FUNCTIONS

OMEGA-3

(EICOSAPENTAENOIC ACID - EPA AND DOCOSAHEXAENOIC ACID - DHA)

Function¦ Essential for brain health, cognitive function, and the development of the nervous system, They also have anti-inflammatory properties and support heart health by reducing the risk of cardiovascular disease,

OMEGA-6 FATTY ACIDS

(LINOLEIC ACID AND ARACHIDONIC ACID)

Function¦ Important for skin health, regulating blood pressure, and supporting immune responses, Arachidonic acid is a precursor to inflammatory signalling molecules, which are necessary for the body's defence mechanisms,

LINOLEIC ACID

POLYUNSATURATED FATTY ACIDS

Function¦ Necessary for maintaining healthy skin, supporting the growth of hair and nails, and serving as components of cell membranes, Linoleic acid is an essential omega-6 fatty acid,

OLEIC ACID OMEGA 9

MONOUNSATURATED FATTY ACIDS

Function¦ Promote heart health by improving cholesterol levels, reducing inflammation, and supporting insulin sensitivity, They are also essential for the structure of cell membranes,

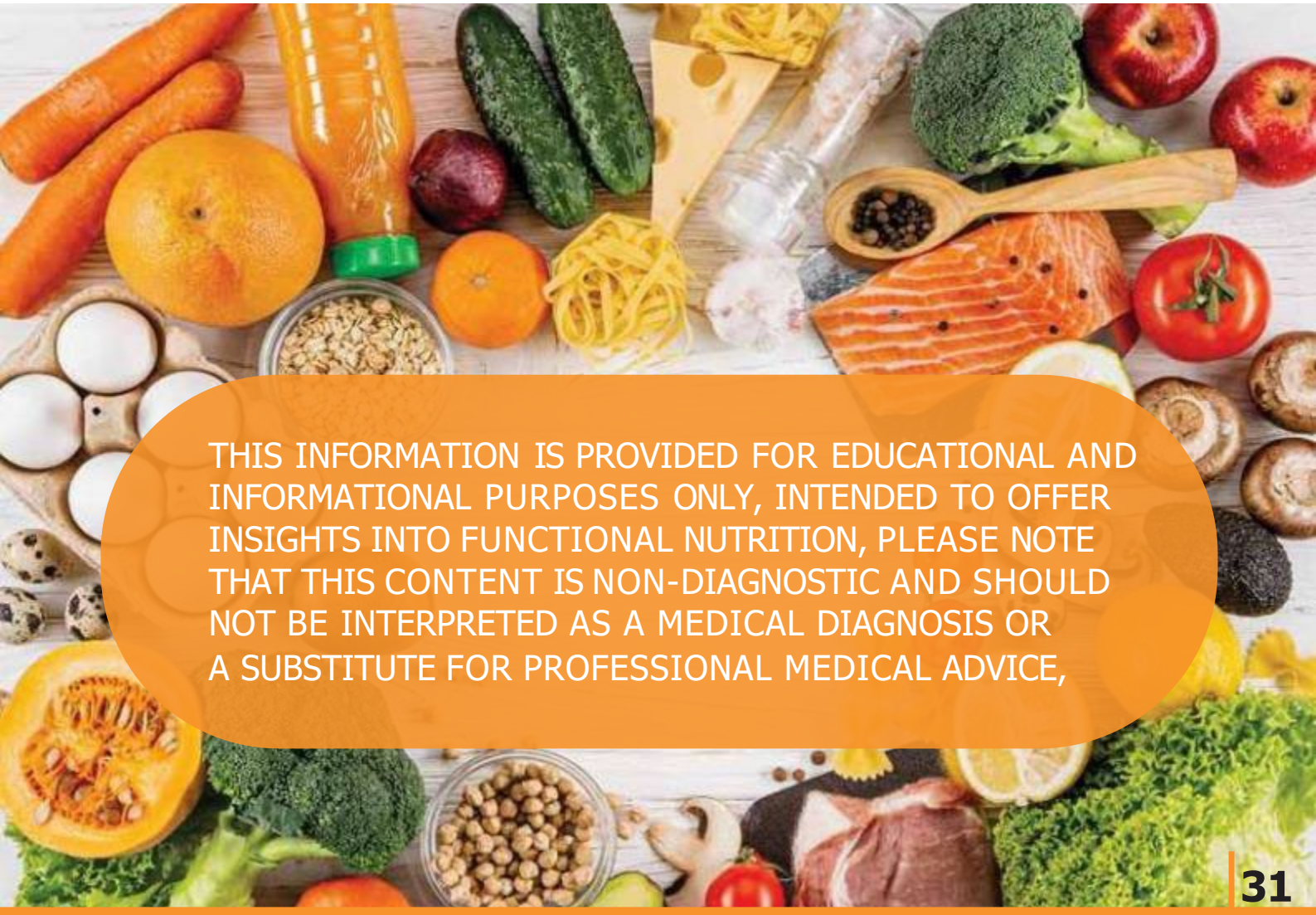
FATTY ACIDS FUNCTIONS

PALMITIC ACID AND STEARIC ACID SATURATED FATTY ACIDS

Function¦ Provide a stable source of energy for the body, support the absorption of fat-soluble vitamins, and contribute to the structure and integrity of cell membranes, However, excessive consumption of saturated fats can contribute to heart disease,

TRANS FATTY ACIDS

Function¦ Typically found in processed and hydrogenated oils, they are not naturally occurring and many scientists state that they may have negative health effects, Trans fats are known to increase the risk of heart disease and should be avoided in the diet,



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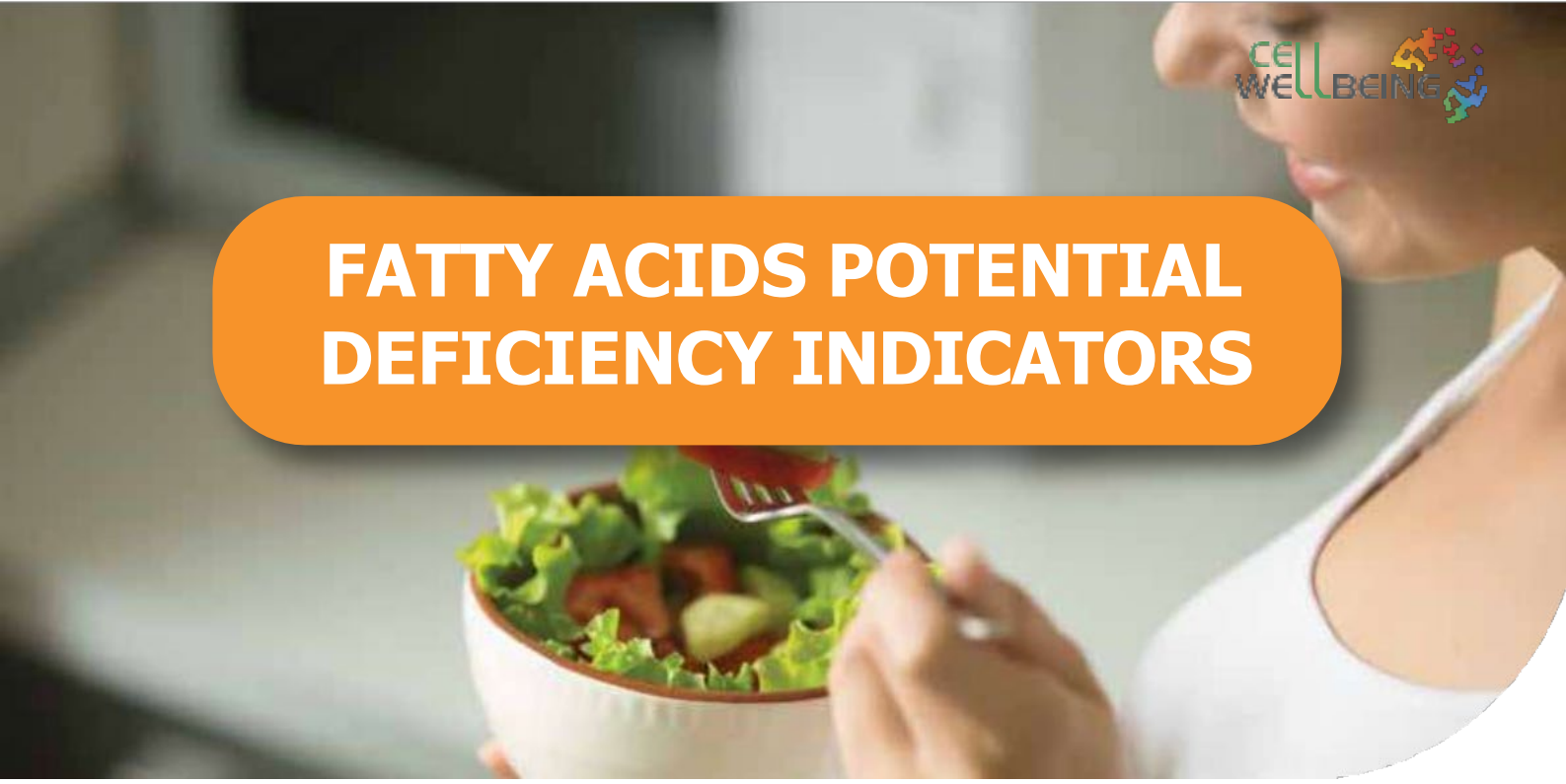


FATTY ACIDS POTENTIAL DEFICIENCY INDICATORS

ALPHA-LINOLENIC ACID (ALA) - AN ESSENTIAL OMEGA-3 FATTY ACID

Impaired cognitive function, Dry scaly skin, Reduced cardiovascular wellbeing, Increased inflammation

BUTYRIC ACID, PROPIONIC ACID, ACETIC ACID

(SHORT-CHAIN FATTY ACIDS)

Digestive issues, stressed gut microbiome, Impaired metabolism

OMEGA-3 FATTY ACIDS

(EICOSAPENTAENOIC ACID - EPA AND DOCOSAHEXAENOIC ACID - DHA)

Impaired cognitive function, Dry scaly skin, Reduced cardiovascular wellbeing, Increased inflammation

OMEGA-6 FATTY ACIDS

(LINOLEIC ACID AND ARACHIDONIC ACID)

Skin issues , Inflammation-related disorders, Hormonal imbalances

LINOLEIC ACID

ACID (POLYUNSATURATED FATTY ACID)

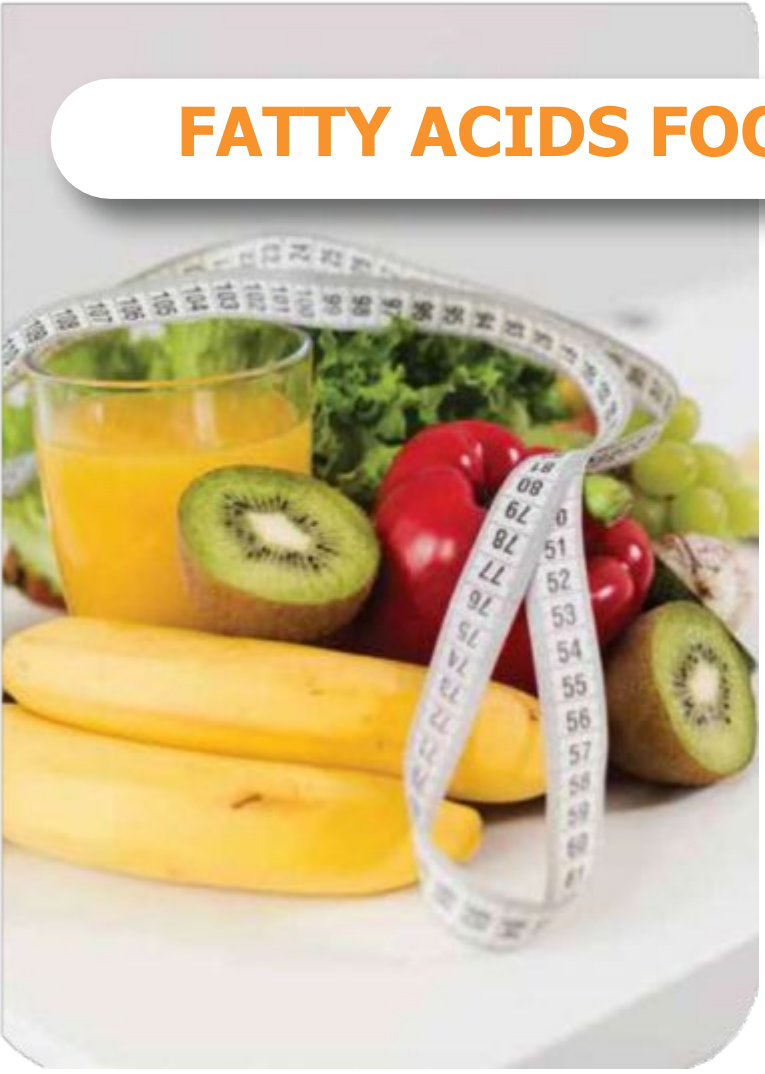
Dry, itchy skin, Impaired wound healing, Increased susceptibility to inflammation

OLEIC ACID

(OMEGA-9 MONOUNSATURATED FATTY ACID)

Cardiovascular wellness, Impaired cholesterol regulation, Increased oxidative stress, Insulin resistance

FATTY ACIDS FOOD SOURCE



ALPHA-LINOLENIC
(ALA) - (3)

Flaxseed, chia, canola, hemp, walnuts, sea buckthorn oil, soybean oil,

ARACHIDONIC
(AA)- (6)

Beef, poultry, eggs, dairy, cheese, fish,

DOCO
(DHA) - (3)

Halibut, mackerel, sardines, oysters, salmon, trout, tuna,

EION
(EPA) - (3)

Salmon, sardines, tuna, fish oils,

GAMMA LINOLEIC
(GLA) - (6)

Spirulina, hemp oil, borage oil, hemp seeds, evening primrose oil,

LINOLEIC
- (6)

Plant oils, oily fish, seaweed, nuts, hemp, eggs, avocado,

OLEIC
- (9)

Canola and sunflower oils, almonds, beef, chicken, eggs, cheese,

ENVIRONMENTAL POLLUTANT INFORMATION

AIR POLLUTION

Fine Particulate Matter (PM2,5)¦ Tiny particles in the air, often from vehicle emissions and industrial processes, can penetrate deep into the lungs and lead to respiratory problems,

ELECTROMAGNETIC RADIATION

Radiofrequency (RF) Radiation¦ Emitted by wireless devices such as cell phones, Wi-Fi routers, and cell towers,it has raised concerns about potential health effects with prolonged exposure,

PESTICIDES AND HERBICIDES

Glyphosate (Roundup)¦ Widely used herbicidelinked to environmental and health concerns, including potential carcinogenicity,

HEAVY METALS

Lead¦ Exposure can occur through lead-based paints, contaminated soil,and old plumbing, leading to neurological and developmental issues,

ENVIRONMENTAL POLLUTANT INFORMATION

MERCURY

Found in some fish species, especially large predatory fish, and can affect the nervoussystem,Aluminium Oxide Food Aluminium can come into contact with food during processing and packaging, This can occur when aluminium equipment or containers are used in food production, such as scratches from aluminium cookware, baking sheets, or aluminium foil, Food Additives¦ Aluminium compounds, such as aluminium potassium sulphate (alum), have been used historically as food additivesfor purposes like firming agents in pickles and certain baked goods, However, their use in modern foodproduction is limited due to safety concerns,

WATER CONTAMINANTS

Chlorine and Chloramine¦ Added to drinking water as disinfec- tants but can form harmful by products,

PHARMACEUTICALS AND PERSONAL CARE PRODUCTS (PPCPS)

Residues from medications and cosmetics can end up in water supplies, potentially affecting aquatic ecosystems and human health,

ENVIRONMENTAL POLLUTANT INFORMATION

PLASTIC POLLUTION

Micro-plastics¦ Tiny plastic particles found inoceans and even drinking water supplies, with potential health and environmental consequences,

CHEMICAL TOXINS

Bisphenol A (BPA)¦ Found in some plastics and food containers, it's a known endocrine disruptor, Per- and Poly fluoroalkyl Substances (PFAS)¦ Used in various products, including non-stick cookware, and linked to adverse health effects,

CHEMICALS

Medication, dyes, paint detergents, cosmetics, weed killers, personal hygiene, cleaners, paint, perfumes, alcohol,

RADIATION

X-Rays, CT Scans, Radon gas, dental X- Rays, sunlight,

ELECTROMAGNETIC FIELDS (EMFS)

Emitted by electronic devices, power lines, and wireless networks, raising concerns about potential health impacts,

SOIL CONTAMINATION

Polycyclic Aromatic Hydrocarbons (PAHs)¦ Found in soil contaminated by industrial processes or vehicle emissions, with potential health risks for those exposed,

HYDROCARBONS

Gas, plastics, fibers, rubber, solvents, explosives, swimming pools, lubricants, varnish, insect repellent,

TOXIC METALS

Deodorants, tin cans, aluminum foil, antacids, cookware, utensils, nail polish, dental work, batteries, old pipes, diesel engines, soft drinks, pesticides, ink/toner,

These pollutants can exert varying levels of influence on human well-being, Taking measures to decrease exposure to these pollutants and advocating for cleaner environments and sustainable practices are crucial steps in mitigating their harmful consequences,

POTENTIAL FUNCTIONAL IMPACTS

CHEMICALS

Irritation of the eyes or nose, excessive cough, shortness of breath, blood in phlegm, jaundice, fatigue, loss of appetite, rash,

HYDROCARBONS

Hormonal imbalances, bone and joint weakness, fatigue, high blood pressure,

RADIATION

Nausea, vomiting, bleeding, diarrhea, hair loss, sloughing of skin, fatigue, mouth ulcers,

TOXIC METALS

Nausea, vomiting, diarrhea, abdominal pain, tremors, heart irregularity, anemia, burning feeling in chest, heartburn, flatulence, chronic cough, dizziness,

DE-STRESSING FOOD SOURCES

CHEMICALS

Green tea, cruciferous veggies, garlic, onions, celery, apples, alfalfa sprouts, lemons, spirulina, cracked chlorella,

HYDROCARBONS

Probiotics, beets, sweet potatoes, nuts and seeds, miso soup, garlic, spirulina, kamut, cracked chlorella, lemons,

RADIATION

Spirulina, chlorella, seaweed, kelp, black/green tea, wheatgrass, lemons, parsley, beets, sauerkraut, ginger,

TOXIC METALS

Bitter greens such as kale, swiss chard, dandelion and mustard greens, arugula, beet greens, broccoli sprouts, lemons, oranges, limes, green tea, garlic, spinach,

RESISTANCE & MICRO ORGANISMS

MICROORGANISM SOURCES

BACTERIA
Ground Beef, raw milk, canned foods, public water, packaged meats, deli items, raw seafood, doorknobs,

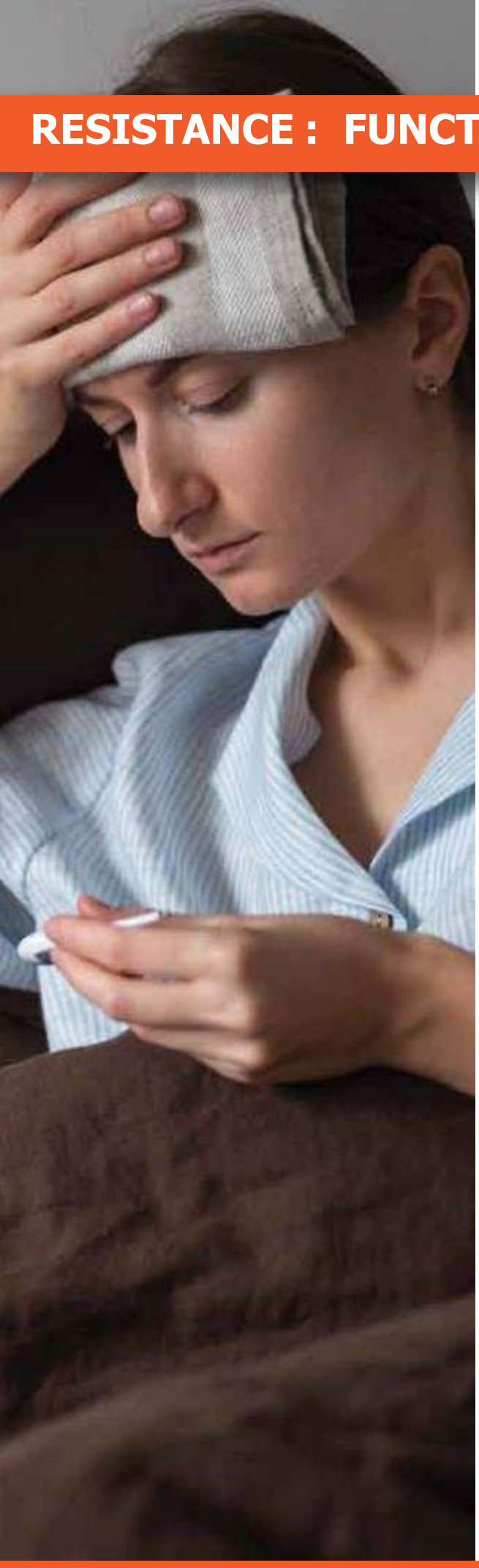
PARASITES
Contaminated food or water, imbalanced gut flora

FUNGUS
Skin infections (athletes' foot, jock itch, etc,)

POST VIRUS
Active virus that is subsiding, but has not fully cleared,

MOLDS / SPORES
High humidity environment, poor ventilation, moisture,

VIRUS
Spread via touch, breathing, saliva or insects, food, water,



RESISTANCE : FUNCTIONAL STRESSORS

BACTERIA

Fever, chills, infrequent urination, vomiting, rapid pulse or breathing, diarrhea, Exhaustion, sweet cravings, white coat on tongue, UTI, joint pain, sinus infection,

FUNGUS

Peeling, itching, redness, burning, blisters, Red patch, typically in circular form, scaly and sometimes raised,

MOLDS / SPORES

Itchy and watery eyes, wheezing, coughing, dry, scaly skin and aggravate asthma,

PARASITES

Fatigue, constipation, diarrhea, GI issues, vomiting, heartburn, loss of appetite,

POST VIRUS

Long term fatigue, muscle weakness, lingering cough or congestion, aches and soreness,

VIRUS

Coughing, sneezing, fever, vomiting, diarrhea, inflammation, fatigue, cramping,

NUTRITIONAL DE-STRESSORS

BACTERIA

Probiotics, aloe vera, turmeric, apple cider vinegar, green tea, nuts, seeds, cranberry juice, Heavy greens such as Spirulina and Kamut grass, Fermented veggies, kefir, unsweetened cranberry juice, kale, spinach, coconut oil, milk thistle, Vitamin C, probiotics,

FUNGUS

Coconut, garlic, apple cider vinegar, cloves, cinnamon, salmon, ginger and topical treatments, Onions, garlic, nuts, seeds, oats and topical treatments, Sometimes antibiotics are necessary, should be last resort,

MOLDS / SPORES

Ginger, radishes, garlic, onions, cilantro, basil, oregano, turmeric, black walnut, seeds, cayenne pepper, cinnamon,

PARASITES

Black walnut, wormwood, olive leaf, oregano oil, grapeseed oil extract, clove oil, horseradish,

POST VIRUS

Kiwi, yogurt (Probiotics), garlic, cloves, honey, ginger, zinc - rich foods such as meat, seafood, peanuts, and green tea,

VIRUS

Blueberries, beets, cabbage, kale, garlic, lemons, seaweed, flaxseed, celery, avocados, apples, Spirulina, cranberries,