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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

WS/T 578.3-2017

**Chinese dietary reference intakes - Part 3: Trace element
(English Translation)**

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Foreword

WS/T 578 "Reference Intakes of Dietary Nutrients for Chinese Residents" is divided into 5 parts.

--Part 1: Macronutrients;

--Part 2: Constant elements;

--Part 3: Trace elements;

--Part 4: Fat-soluble vitamins;

--Part 5: Water-soluble vitamins.

This part is part 3 of WS/T 578.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

Drafting organizations of this section. Chinese Nutrition Society, Chinese Center for Disease Control and Prevention Institute of Nutrition and Health, Harbin Medical University, Tianjin Medical University of Science and Technology, Henan Provincial Center for Disease Control and Prevention, Chinese People's Liberation Army Bethune Medical Officer School.

1 Scope

This part stipulates the reference intake of 7 essential trace elements of Chinese residents' dietary iron, iodine, zinc, selenium, copper, molybdenum and chromium.

This section applies to the dietary intake evaluation and dietary guidance of healthy people or individuals among Chinese residents.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

WS/T 476-2015 Nutrition terms

3 Terms and definitions

The following terms and definitions apply to this document.

Dietary nutrient reference intake Evaluate whether the dietary nutrient supply can meet the needs of the human body, whether there is a risk of excessive intake, and help prevent certain chronic non-infectious A set of reference values for sexual diseases, including. average requirement, recommended intake, appropriate intake, tolerable maximum intake, and recommended intake the acceptable range of macronutrients.

[WS/T 476-2015, definition 5.3.1] 3.1.1 Average requirement the average nutrient requirement of each body in the group.

[WS/T 476-2015, definition 5.3.4] 3.1.2 Recommended intake it can meet the nutrient intake level required by most individuals in a certain gender, age and physiological status group.

[WS/T 476-2015, definition 5.3.5] 3.1.3 Proper intake A safe intake level of nutrients. It is the intake of a certain nutrient in healthy people obtained through observation or experiment.

[WS/T 476-2015, definition 5.3.6] 3.1.4 Tolerable maximum intake the average daily intake of nutrients is the highest. This amount will not cause damage to almost all individuals in the general population.

[WS/T 476-2015, definition 5.3.7] 3.2 Trace element Trace elements the content of minerals in the human body is less than 0.01% of body weight. Divided into three categories. the first category is the essential trace elements for the human body, including iron, iodine, There are 8 kinds of zinc, selenium, copper, molybdenum, chromium, and cobalt; the second category is trace elements that may be necessary for the human body, including 5 kinds of manganese, silicon, nickel, boron and vanadium; the third category it is potentially toxic, but at low doses, trace elements that may be beneficial to the human body, including fluorine, lead, cadmium, mercury, arsenic, aluminum, lithium, Tin 8 kinds.

[WS/T 476-2015, definition 3.5.2] 3.2.1 Iron One of the essential trace elements for the human body. It is the component and raw material of heme and iron-sulfur groups in the body, and participates in the transport of oxygen in the body and tissue respiration Process to maintain normal hematopoietic function. When it is lacking, it can affect the synthesis of hemoglobin and cause iron deficiency anemia. Excess iron can cause diarrhea and other gastrointestinal Road adverse reactions.

3.2.2

Iodine

One of the essential trace elements for the human body. Synthesize thyroid hormone components. Inadequate intake can cause iodine deficiency disorders. Long-term excessive intake can cause Hazards such as high iodine goiter.

[WS/T 476-2015, definition 3.5.2.3] 3.2.3 Zinc One of the essential trace elements for the human body. Participate in the composition of various enzymes in the body, with catalytic, structural and regulatory functions. Zinc deficiency can cause taste Obstacles, poor growth and development, skin damage and immune function damage.

3.2.4

Selenium

One of the essential trace elements for the human body. Incorporating selenium-containing amino acids into glutathione peroxidase (GPX), etc.

The primary structure of the protein peptide chain is involved in the body's antioxidant activity. Selenium deficiency is an important risk factor for Keshan disease.

3.2.5

Copper

One of the essential trace elements for the human body. Participate in the formation of copper protein and various enzymes. Small cell hypochromic anemia can occur when it is lacking.

[WS/T 476-2015, definition 3.5.2.6] 3.2.6 Molybdenum One of the essential trace elements for the human body. It is a component of xanthine oxidase/dehydrogenase, aldehyde oxidase and sulfite oxidase. Positive Molybdenum deficiency is unlikely to occur in the human body under regular dietary conditions.

[WS/T 476-2015, definition 3.5.2.7] 3.2.7 Chromium One of the essential trace elements for the human body. The chromium in natural foods and organisms is mainly trivalent chromium, which is an important component of glucose tolerance factor Points, activators of certain enzymes. Insufficient chromium intake can cause disorders of sugar and lipid metabolism.

4 Reference intake of dietary trace elements for Chinese residents

Refer to Table 1 for the dietary trace element reference intakes of Chinese residents of different genders, ages and physiological conditions.