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**WS**

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

**WS/T 663-2020**

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**Specification for screening of refractive error in primary and  
secondary school students  
(English Translation)**

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### Foreword

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

Drafting organizations of this standard. Shanghai Eye Disease Prevention Center, Peking University Institute of Child and Adolescent Health, First Affiliated to Shanghai Jiaotong University People's Hospital.

### 1 Scope

This standard specifies the basic requirements, screening methods, referral recommendations and post-screening requirements for the screening of refractive errors for primary and secondary school students.

This standard applies to hospitals, disease prevention and control centers, community health service centers, and township health centers that carry out screening of refractive errors for primary and secondary school students.

Birth hospitals, maternity and child health centers, and primary and secondary school health care institutions.

## 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.

GB/T 11533 standard logarithmic eye chart GB/T 26343 Technical Specification for Student Health Check ISO 10342 Ophthalmic instruments-Eye refractometers

## 3 Terms and definitions

The following terms and definitions apply to this document.

**Refractive error**

When the eye is stationary, the parallel light cannot be focused on the retina after entering the human eye.

**Note:** Refractive errors include. hypermetropia (hypermetropia), myopia (myopia) and astigmatism (astigmatism).

**Screening of refractive error** Use quick and simple methods such as visual inspection, refractive measurement under non-cycloplegia, etc., to identify people who may have refractive errors in the crowd Distinguish from people who don't have refractive errors.

**Diopter of spherical power** the lens power to make the paraxial parallel light converge at one point.

**Diopter of cylinder power** in order to make the paraxial parallel light beams converge on two separate, mutually orthogonal intersection lines, there are two lens powers with main vertex power.

**Spherical equivalent; SE** the spherical power plus 1/2 cylinder power.

### 4.1 Screening agency

Screening agencies include hospitals, disease prevention and control centers, community health service centers, township health centers, maternal and child health centers, and primary and secondary school health centers.

Health care institutions have screening personnel who meet the requirements of 4.2.

### 4.2 Screeners

Screening personnel should be those who hold national qualification certificates for doctors, technicians, and nurses related to ophthalmology. Professionals with relevant standardized

training Industry technicians can assist in the work.

### **4.3 Screening sites**

#### **4.3.1**

The screening site should be clean, tidy, and quiet.

#### **4.3.2**

The size and light intensity of the screening site should meet the inspection distance and lighting requirements for the use of eye chart in GB/T 11533.

#### **4.3.3**

The temperature and humidity of the screening site should meet the requirements of the refractor for the working environment.

### **4.4 Screening equipment**

#### **4.4.1**

Refractive test should use a refractometer that meets the requirements of ISO 10342, and cross-lens can be used in areas where there is no refractometer.

#### **4.4.2**

The vision checklist should meet the requirements of GB/T 11533.

#### **4.4.3**

The instruments and equipment used for screening should be approved and tested by relevant departments, and they should be regularly subject to metrological verification and calibration.

### **4.5 Screening time and frequency**

The same school is screened at the same time period every year, and the screening frequency is not less than once every school year. Areas with conditions can increase the frequency of screening.

### **5.1.1 Naked eye distance vision examination**

#### **5.1.1.1**

The naked eye distance visual acuity adopts the measured value, and the inspection method is in accordance with the provisions of GB/T 11533 and GB/T 26343.

#### **5.1.1.2**

Before the examination, ask the subject whether he wears frame glasses or contact lenses (including hard and soft lenses). Such as wearing frame Wear glasses or contact lenses,

and after writing on the "Refractive Error Screening Results Record Form", remove the glasses or cornea Contact lens to check naked eyesight. "Refractive Error Screening Results Record Form" see Appendix A.

#### **5.1.1.3**

During the inspection, the screener reminds the subject that the subject shall not squint, peek, rub his eyes, squint, lean forward, or accept prompts from others.

#### **5.1.1.4**

The 5-point recording method is adopted for the visual inspection record.

### **5.1.2 Wear glasses for distance vision examination**

For subjects who wear glasses or contact lenses (including hard and soft lenses) on a daily basis, the distance vision with glasses should also be checked.

The method is in accordance with 5.1.1.1, 5.1.1.3 and 5.1.1.4. The visual acuity of those who wear orthokeratology at night is recorded as visual acuity with glasses.

### **5.1.3 Refractive test**

#### **5.1.3.1**

The refractive test is performed with a refractor under non-ciliary muscle paralysis. Before daily screening, use standard analog eye Correction and adjust the cylinder value to a negative state. Each eye of the subject is measured 3 times, and the average value is taken; such as any 2 times of spherical lens If the difference between the measured value of the degree is greater than or equal to 0.50 D, the number of measurements should be increased, and then the average value should be taken. The average value is rounded to two decimal places.

The results with large fluctuations in multiple tests should be recorded in the record sheet. Refractive testing uses actual measured values and should not be obtained by means of questionnaires, self-reports, etc.

#### **5.1.3.2**

In areas where the refractor cannot be used for testing, the refractive test can be performed with a string lens under non-ciliary muscle paralysis.

The inspection method of the string mirror is in accordance with the provisions of GB/T 26343.

#### **5.1.3.3**

Those who wear spectacles with frames will take off the spectacles before performing a refractive test, and those who wear contact lenses will take off the spectacles 30 Refractive detection is performed above min. Those who wear orthokeratology at night may not