

# Hemoglobin or Hematocrit

## CHILD AND TEEN CHECKUPS (C&TC) FACT SHEET FOR PRIMARY CARE PROVIDERS

Hemoglobin or Hematocrit screening is required once between 9 and 15 months of age and once in adolescence for menstruating youth. Iron deficiency can pose risks to the child or youth.

### C&TC Requirements

#### General

Hemoglobin (Hb) or Hematocrit (Hct) screening is required at one C&TC visit between 9 and 15 months of age and once between 11 and 20 years of age for all menstruating youth.

#### Personnel

A medical assistant or lab technician can complete the screening. A licensed health care provider must interpret the results and ensure appropriate follow-up: physician, nurse practitioner, physician assistant, or registered or public health nurse (RN, PHN) who has completed the C&TC Comprehensive Screening training through the Minnesota Department of Health (MDH).

#### Documentation

Documentation forms should contain a complete record of laboratory test results or indicate where they are in the chart.

For documentation examples or for use as a template with your electronic medical record, refer to the [C&TC Provider Documentation Forms](#).

### Procedure

#### Hb/Hct Anemia Cutoffs for C&TC

Sex assigned at birth	Age	Hb (<g/dl)	Hct (<%)
Both	6 months – < 2 years	11.0	32.9
Both	2 years – < 5 years	11.1	33.0
Both	5 years – < 8 years	11.5	34.5
Both	8 years – < 12 years	11.9	35.4
Females (non-pregnant)	12 years – < 15 years	11.8	35.7
Females (non-pregnant)	15 years – < 18 years	12.0	35.9
Females (non-pregnant)	≥ 18 years	12.0	35.7

(Centers for Disease Control and Prevention, 1998). Note: Hb and Hct values may vary depending on the laboratory or specific test used.

#### Follow-Up

All infants and youth with Hb or Hct values below the cutoffs per age on the above table should have further evaluation and follow up (Baker & Greer, 2010).

## Importance of Screening

Iron deficiency (ID) is the most common nutritional deficiency in the world. Iron Deficiency Anemia (IDA) is a common cause of anemia in young children (Baker & Greer, 2010).

IDA is associated with psychomotor and cognitive abnormalities in children (Baker & Greer, 2010).

## Health Disparities in Anemia

The rate of anemia in children enrolled in Minnesota's Women, Infants and Children (WIC) program is 1.7 times higher than the United States general child population for all race/ethnic groups. Black/African American children experience about two times the rate of anemia compared to white children (Minnesota WIC Program, 2019).

## Professional Recommendations

### American Academy of Pediatrics

The American Academy of Pediatrics (AAP) recommends universal screening of Hb concentration at approximately 1 year of age. This should include assessing risk factors associated with ID/IDA (Baker & Greer, 2010). Also, refer to the [Recommendations for Preventive Pediatric Health Care](#) and AAP Pediatric Nutrition, 8<sup>th</sup> Edition Chapter 19.

## Resources

### Minnesota Department of Human Services

- [C&TC Schedule of Age-Related Screening Standards](#)
- [Minnesota Health Care Programs \(MHCP\) Provider Manual - C&TC Section](#)

### Minnesota Department of Health

- [Child and Teen Checkups \(C&TC\)](#)
- [Women, Infants and Children \(WIC\)](#)

## References

Baker, R. D., & Greer, F. R. (2010). Diagnosis and prevention of iron deficiency and iron-deficiency anemia in infants and young children (0-3 years of age). *Pediatrics*, 126(5), 1040-1050. doi:10.1542/peds.2010-2576

Centers for Disease Control and Prevention. (1998). *Recommendations to Prevent and Control Iron Deficiency In the United States*. Morbidity and Mortality Weekly Report.

Minnesota WIC Program. (2019). *Child Anemia in Minnesota WIC Fact Sheet*. Retrieved from <https://www.health.state.mn.us/docs/people/wic/localagency/reports/wtstatus/info/2019childanemia.pdf>

## For More Information

The Child and Teen Checkups (C&TC) program is administered through a partnership between the Minnesota Department of Human Services and the Minnesota Department of Health.

For questions about this fact sheet or to obtain this information in a different format, call 651-201-3650 or email [health.childteencheckups@state.mn.us](mailto:health.childteencheckups@state.mn.us).

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## Resource Links

- [C&TC Provider Documentation Forms \(https://mn.gov/dhs/partners-and-providers/policies-procedures/minnesota-health-care-programs/provider/types/ctc-resources\)](https://mn.gov/dhs/partners-and-providers/policies-procedures/minnesota-health-care-programs/provider/types/ctc-resources)
- [Recommendations for Preventive Pediatric Health Care \(https://downloads.aap.org/AAP/PDF/periodicity\\_schedule.pdf?\)](https://downloads.aap.org/AAP/PDF/periodicity_schedule.pdf)
- [C&TC Schedule of Age-Related Screening Standards \(https://edocs.dhs.state.mn.us/lfserver/Public/DHS-3379-ENG\)](https://edocs.dhs.state.mn.us/lfserver/Public/DHS-3379-ENG)
- [Minnesota Health Care Programs \(MHCP\) Provider Manual - C&TC Section \(www.dhs.state.mn.us/main/idcplg?IdcService=GET\\_DYNAMIC\\_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=dhs16\\_150092\)](http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=dhs16_150092)
- [Child and Teen Checkups \(C&TC\) \(www.health.state.mn.us/people/childreneyouth/ctc/index.html\)](http://www.health.state.mn.us/people/childreneyouth/ctc/index.html)
- [Women, Infants and Children \(WIC\) \(www.health.state.mn.us/people/wic/index.html\)](http://www.health.state.mn.us/people/wic/index.html)