

# Hemoglobin or Hematocrit

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

Hemoglobin (Hb) or hematocrit (Hct) screening is required once between 9 and 15 months and once in adolescence for menstruating youth. Iron deficiency can pose risks to the child or youth.

### C&TC standards

#### General

Hb or Hct screening is required at one C&TC visit between 9 and 15 months and once between 11 and 20 years 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.

#### Documentation

Document a complete record of lab test results in the patient’s record.

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

### 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 lab or specific test used.

#### Follow-up

Infants and youth with Hb or Hct values below age-specific cutoffs should have further evaluation and follow up (Baker & Greer, 2010).

## Importance of screening

Iron deficiency is the most common nutritional deficiency in the world.

Iron deficiency anemia is a common cause of anemia in young children (Baker & Greer, 2010). Iron deficiency anemia is associated with psychomotor and cognitive abnormalities in children (Baker & Greer, 2010).

## Health disparities in anemia

Nationally, anemia prevalence decreased as family income increased (Williams, Ansai, Ahluwalia, & Nguyen, 2024). In Minnesota's Women, Infants, and Children (WIC) program, Black children experience nearly two times the rate of anemia compared to white children (Minnesota WIC Program, 2019). These disparities are shaped in part by systems of structural racism and other forms of discrimination and inequities.

## Professional recommendations

### American Academy of Pediatrics

Universal screening of Hb concentration is recommended at approximately 1 year of age. This includes assessing risk factors associated with iron deficiency/iron deficiency anemia (Baker & Greer, 2010). Refer to the [Recommendations for Preventive Pediatric Health Care](#) and the American Academy of Pediatrics 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 \(WIC\)](#)

## 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 \(C&TC\) \(www.health.state.mn.us/people/childreynouth/ctc/index.html\)](http://www.health.state.mn.us/people/childreynouth/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)

## 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>

Williams, A., Ansai, N., Ahluwalia, N., & Nguyen, D. (2024, December). *Anemia Prevalence: United States, August 2021–August 2023*. Retrieved from Centers for Disease Control and Prevention: <https://www.cdc.gov/nchs/products/databriefs/db519.htm>