# Transfusion Management of Beta (β) Thalassemia: Understanding a Transfusion Plan

*A Thalassemia Resource for People with Thalassemia and their Caregivers*

## Key Facts About β Thalassemia

- β thalassemia is an inherited blood disorder (passed from parents to children through genes).
- People with β thalassemia cannot make enough of a protein called globin, an important part of the hemoglobin that is contained inside red blood cells.
- When not enough hemoglobin is made, there are fewer red blood cells in the bloodstream, so less oxygen reaches the organs and tissues that need it. This condition is called anemia.

Healthcare providers follow guidelines to decide if a person with β thalassemia needs regularly occurring blood transfusions to treat their anemia. Once it is determined that someone needs to start receiving regular transfusions, healthcare providers develop a transfusion plan. The transfusion plan may vary from person to person and may need to be adjusted over time.

## What Information do Healthcare Providers Consider When Developing a Transfusion Plan for People with β thalassemia

### Target Hemoglobin Level

The target hemoglobin level is the level that most people with β thalassemia need to ensure normal growth and puberty, to prevent fatigue, and to avoid problems with their spleen. For people receiving regular transfusions, the healthcare provider will monitor hemoglobin levels before each transfusion to make sure it does not fall below the target level. Healthcare providers may refer to this target hemoglobin level as the target *pretransfusion* hemoglobin level.

In general, for the two types of beta thalassemia below, the target pretransfusion hemoglobin level is

- 9.5–10.5 g/dL for people with β thalassemia major
- 9.0–10.0 g/dL for people with hemoglobin E (HbE)

Blood hemoglobin is measured **in grams per deciliter,** written **g/dL.**

### Timing of Transfusions

The transfusion plan also includes a schedule of how often the regular transfusions should occur. This schedule helps maintain the target pretransfusion hemoglobin level and prevent complications for most people with β thalassemia.

In general, regular transfusions take place

- Every 3 weeks in most older children and adults with β thalassemia major
- Every 4 weeks in younger children with β thalassemia major and most people with HbE β thalassemia

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## Additional Considerations

Healthcare providers also consider these questions when developing a transfusion plan for people with β thalassemia:

Is their spleen intact?

How much do they weigh?

Do they have congestive heart failure (a condition that happens when the heart cannot pump enough blood and oxygen to support other organs in the body)?

Are they severely fatigued?

Do they have bone pain?

Do they have pulmonary hypertension (a condition that happens when the pressure in the blood vessels leading from the heart to the lungs is too high)?

The answers to these questions help determine how often the transfusions will take place and how much blood will be transfused each time.

People with β thalassemia may talk with their healthcare provider to understand if they need to start regular transfusions and, if so, what the best transfusion plan is for them.

Reference: Lal A, Wong T, Keel S, Pagano M, Chung J, Kamdar A, et al. The transfusion management of beta thalassemia in the United States. Transfusion. 2021;1–13. https://onlinelibrary.wiley.com/doi/10.1111/trf.16640

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*These materials are not part of the CDC guidelines and recommendations. The original evidence-based report and recommendations were developed in 2021 by a multidisciplinary committee, the Thalassemia Western Consortium, consisting of members from 10 hematology centers. The consortium was partially funded under a prior cooperative agreement CDC-RFA-DD14-1406. While the Consortium was supported with federal funding, its work on clinical recommendations for transfusion practices was independent of CDC, and the contents of the resulting published report and these thalassemia transfusion resources are solely the responsibility of the authors and do not necessarily represent the official views of, nor an endorsement by, CDC or the Department of Health and Human Services.*