

Objectives

After completing this module a WIC staff person will be able to:

- explain the importance of performing measurements using standard procedures
- demonstrate correct procedures for taking weights for infants, children, and adults
- demonstrate correct procedures for taking lengths for infants and children
- demonstrate correct procedures for taking heights for children and adults
- demonstrate accurate plotting on growth grids
- demonstrate accurate plotting on Prenatal Weight Gain Grids
- demonstrate correct procedures for taking hematocrits
- correctly identify normal and abnormal values for a hematocrit given the appropriate table.
- describe universal precautions to prevent infection

Introduction

When certifying/recertifying a WIC participant it is necessary to collect certain information about a person. Included in this information are the heights/lengths and weights of participants and in most cases their hematocrit or hemoglobin levels. This Screening Module is about the proper way to obtain and record this information. These measurements are used to assign nutrition risk factors during certification/recertification. This information is also used to assess a participant's health, plan education and intervention, and to monitor change.

Anthropometry -
Measurement of body size

Height/length and weight are called anthropometric measurements. Anthropometric measurements refer to measurements of the size of the body. Anthropometric measurements include weight, height, length, head circumference, waist size, shoe size, and other measurements. In WIC we are primarily concerned with weight, height, and length. These will be discussed in this module. This module will also discuss how to plot height, weight, and length information on the proper growth and weight gain grids for evaluation.

Examples of anthropometric measurements:

- height
- length
- weight
- head circumference
- waist size
- shoe size
- hat size

Height: Measurement of the distance from the top of the head to the bottom of the feet that is performed standing upright. This measurement is used for children over two years of age and for adults.

Length: Measurement of the distance from the top of the head to the bottom of the feet that is performed lying down. This measurement is used for infants and children two years of age and younger and for children who cannot stand upright.

Height and length are NOT the same and cannot be used interchangeably.

Blood tests fall into a category called hematology. In WIC we perform two hematological tests to determine how much iron a participant has in their blood. Iron deficiency is a

Hematology - The study of blood

Examples of hematologic measurements:

- hematocrit
- hemoglobin

common problem for pregnant women and growing children. The amount of iron in a person's blood is an indicator of whether there is enough iron in their body. One of the hematological tests is called a hematocrit. The other is called a hemoglobin test. Local WIC agencies will generally only use one test or the other. Only hematocrit tests will be discussed in detail in this module since it is the most common test performed by Colorado WIC clinics.

It is important that all measurements used in screening WIC participants be performed using a standard procedure. If two people perform a test in different ways the values cannot be compared and the information is not useful. It would be difficult to tell from one WIC visit to the next if a child or pregnant woman has gained or lost weight. If one WIC educator weighs pregnant women with shoes and coat while another weighs women without shoes and no coat, it would be impossible to compare the measurements from visit to visit. The women may be gaining or losing weight inappropriately and we would not be able to tell.

Information gathered about weights and heights is also compared against national standards such as growth grids or other charts. These grids and charts are created using standard procedures. Unless these same standard procedures are used to obtain heights, lengths, weights, and hematocrits in the local WIC clinics the values cannot be compared to the "ideal" values of the national standards. Imagine the problem that would occur if Colorado WIC decided to weigh children with their shoes and wearing heavy clothing. The growth grids for children were developed using the weights of children wearing light clothing and no shoes. Pretty soon it would appear that Colorado WIC children were much heavier than other children in the United States. Some children may even be incorrectly labeled as being overweight and receive counseling for overweight when in fact the child was of normal weight.

Here is another example to illustrate why standard procedures are important:

An infant is weighed at a WIC certification visit. The WIC educator is very diligent and undresses the infant to weigh the infant nude. Compared to a previous weight at the WIC clinic the infant does not appear to be growing well. The infant should have gained more weight between the two visits. Because of the concerns expressed at WIC the mother takes the infant to the pediatrician for a checkup later that afternoon. The nurse at the pediatrician's office weighs the infant, but this time the infant is weighed wearing a wet diaper and a couple of layers of clothing. The infant's mother is surprised to learn that her infant has gained almost a half a pound in the two hours since her WIC visit. The nurse tells the mother that her infant is gaining weight adequately compared to the previous WIC weight. For an infant a half-pound difference in body weight can mean the difference between identifying an infant with growth failure and one with adequate growth.

In this case the mother would be confused. WIC says there is concern about her infant's weight while the physician's office says there is no concern. Comparing the infant's weight to the standard growth grids, using WIC's weight the infant's growth appears poor, while using the physician's office weight the growth appears to be normal. If the WIC weight was used for assessment then something can be done to help the mom improve the infant's growth. If the weight from the physician's office was used for assessment then the infant would continue with poor growth. This could have long-lasting consequences for the infant's growth and development.

It is very important that all anthropometric and hematologic tests be performed using standard procedures, otherwise the values are meaningless.

For any type of measurement to give useful information it must be compared against some type of standard. In this module you will learn how to plot the weights, heights, and lengths of infants and children on standard graphs to evaluate their growth. You will learn to plot the weight gain of a pregnant woman to determine if she is gaining weight ap-

appropriately. You will learn to compare hematocrit/hemoglobin values against charts to determine if a blood value for an infant, child or woman is appropriate for them.

