

BLOOD GLUCOSE TARGETS

It's important to remember that HbA1c measures average blood glucose (BG) over an approximately 120-day period. However, the more recent BG values contribute considerably more to the HbA1C result than the older values. This means that HbA1c is in fact a "weighted" average of BG levels. BG levels in the preceding 30 days contribute ~50% in the final result, BG levels in the preceding 31 to 90 days contribute ~40% in the final result, and BG levels in the preceding 91-120 days contribute ~10% in the final result. This explains why HbA1c can change relatively quickly with large changes in BG values. The general relationship between glycohemoglobin and BG levels is as follows:

HbA1c	Ave BG*	Range
4	65	
5	100	Non-diabetic
6	135	
6.5	150	ACE Target
7	170	ADA Target
8	205	Above Target
9	240	
10	275	
11	310	
12	345	

*These average blood glucose readings are plasma glucose. Mean whole blood glucose values are 10-15% lower. Most current blood glucose meters are calibrated to read as plasma glucose.

Typical blood glucose averages are as follows:

For a HbA1c of 6.0%:

Fasting	Pre-Meal	1 ½ hr Post-meal	Bedtime
105	125	158	125

For a HbA1c of 6.5%:

Fasting	Pre-Meal	1 ½ hr Post-meal	Bedtime
110	142	176	140

For a HbA1c of 7.0%:

Fasting	Pre-Meal	1 ½ hr Post-meal	Bedtime
115	157	194	155

This data is extrapolated from the Diabetes Control and Complications Trial or DCCT (New Engl J Med 1993;329:977-986). This analysis of the DCCT glucose profile data is published (Diabetes Care 25:275-278, 2002).

Reviewed 3/23