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Blood Sugar & A1C Chart

Fasting, after-meal and A1C numbers in mg/dL and mmol/L, for adults who are not pregnant

TEST RESULTS: WHAT THE NUMBERS MEAN

TEST	NORMAL	PREDIABETES	DIABETES
Fasting blood sugar no food for 8+ hours	Below 100 mg/dL (below 5.6 mmol/L)	100 to 125 mg/dL (5.6 to 6.9)	126 mg/dL or higher (7.0 or higher)
2-hour glucose tolerance test	Below 140 mg/dL (below 7.8)	140 to 199 mg/dL (7.8 to 11.0)	200 mg/dL or higher (11.1 or higher)
A1C	Below 5.7%	5.7% to 6.4%	6.5% or higher
Random blood sugar	Not used to show normal or prediabetes		200 mg/dL or higher with classic symptoms

A diagnosis is usually confirmed with a second test unless symptoms are clear. Values in parentheses are mmol/L (mg/dL ÷ 18).

COMMON TARGETS WITH DIABETES (ADA)

WHEN	TARGET FOR MANY ADULTS
Before meals	80 to 130 mg/dL (4.4 to 7.2)
1 to 2 hours after a meal starts	Below 180 mg/dL (below 10.0)
A1C	Below 7%
CGM time in range	More than 70% of the time at 70 to 180 mg/dL

Your own targets may be higher or lower. Set them with your care team.

LOW BLOOD SUGAR

LEVEL	READING
Level 1	Below 70 mg/dL (3.9): treat it and recheck
Level 2	Below 54 mg/dL (3.0): act right away
Level 3	Severe: confused or unable to treat yourself; needs help from someone else

A1C AND AVERAGE BLOOD SUGAR

A1C	AVERAGE MG/DL	MMOL/L
5.0%	97	5.4
5.7%	117	6.5
6.0%	126	7.0
6.5%	140	7.8
7.0%	154	8.6
8.0%	183	10.2
9.0%	212	11.8
10.0%	240	13.3

Estimated average glucose (eAG) = 28.7 × A1C − 46.7. Every 1% of A1C is about 29 mg/dL of average blood sugar.

Lab tip: a home meter and a lab draw will rarely match exactly. Meters meeting the ISO 15197 standard read within 15 mg/dL (below 100) or 15% (100 and up) of the lab for 95% of tests.

Track it: download the free Glucose & A1C Log at AskSonya.ai/free-pdfs

Created by Sonya M., CLS, Clinical Laboratory Scientist · More free charts at AskSonya.ai (spelled S-O-N-Y-A)

Educational only, not medical advice. Labs and experts use slightly different ranges: always use the reference range printed on your own report and talk with your healthcare provider about your results.

Sources: American Diabetes Association, Standards of Care in Diabetes; CDC, Diabetes Tests; Nathan DM et al., Diabetes Care 2008 (A1C to average glucose).