Ten rows and five columns of the body data set

Obs	case	fat_brozek	fat_siri	dens	age
1	1	12.6	12.3	1.0708	23
2	2	6.9	6.1	1.0853	22
3	3	24.6	25.3	1.0414	22
4	4	10.9	10.4	1.0751	26
5	5	27.8	28.7	1.0340	24
6	6	20.6	20.9	1.0502	24
7	7	19.0	19.2	1.0549	26
8	8	12.8	12.4	1.0704	25
9	9	5.1	4.1	1.0900	25
10	10	12.0	11.7	1.0722	23

The CONTENTS Procedure

Data Set Name	MODULE02.BODY	**Observations**	252
Member Type	DATA	**Variables**	19
Engine	V9	**Indexes**	0
Created	06/19/2025 13:19:00	**Observation Length**	152
Last Modified	06/19/2025 13:19:00	**Deleted Observations**	0
Protection		**Compressed**	NO
Data Set Type		**Sorted**	NO
Label			
Data Representation	WINDOWS_64		
Encoding	wlatin1 Western (Windows)		

Engine/Host Dependent Information	
Data Set Page Size	65536
Number of Data Set Pages	1
First Data Page	1
Max Obs per Page	430
Obs in First Data Page	252
Number of Data Set Repairs	0
ExtendObsCounter	YES
Filename	Q:\5507-2025b\02\data\body.sas7bdat
Release Created	9.0401M3
Host Created	X64_8PRO

Alphabetic List of Variables and Attributes				
#	**Variable**	**Type**	**Len**	**Label**
12	abdomen	Num	8	Abdomen circumference (cm)
5	age	Num	8	Age (yrs)
16	ankle	Num	8	Ankle circumference (cm)
17	biceps	Num	8	Biceps circumference (cm)
8	bmi	Num	8	Body mass index (kg/m^2)
1	case	Num	8	Case number
11	chest	Num	8	Chest circumference (cm)
4	dens	Num	8	Density
2	fat_brozek	Num	8	Fat (Brozek's equation)
3	fat_siri	Num	8	Fat (Siri's equation)
9	ffw	Num	8	Fat Free Weight (lbs)

The CONTENTS Procedure

Alphabetic List of Variables and Attributes				
#	Variable	Type	Len	Label
18	forearm	Num	8	Forearm circumference (cm)
13	hip	Num	8	Hip circumference (cm)
7	ht	Num	8	Height (inches)
15	knee	Num	8	Knee circumference (cm)
10	neck	Num	8	Neck circumference (cm)
14	thigh	Num	8	Thigh circumference (cm)
19	wrist	Num	8	Wrist circumference (cm)
6	wt	Num	8	Weight (lbs)

Descriptive statistics for ht
The minimum is very low

The MEANS Procedure

Analysis Variable : ht Height (inches)				
N	Mean	Std Dev	Minimum	Maximum
252	70.1488095	3.6628558	29.5000000	77.7500000

The row with the smallest ht
Note the inconsistency with wt

Obs	case	fat_brozek	fat_siri	dens	age	wt	ht	bmi	ffw	neck	chest	abdomen	hip
1	42	31.7	32.9	1.025	44	205	29.5	29.9	140.1	36.6	106	104.3	115.5

Obs	thigh	knee	ankle	biceps	forearm	wrist
1	70.6	42.5	23.7	33.6	28.7	17.4

The row with the largest ht
This seems quite normal to me

Obs	case	fat_brozek	fat_siri	dens	age	wt	ht	bmi	ffw	neck	chest	abdomen	hip
1	96	17.3	17.4	1.0991	53	224.5	77.75	26.1	185.7	41.1	113.2	99.2	107.5

Obs	thigh	knee	ankle	biceps	forearm	wrist
1	61.7	42.3	23.2	32.9	30.8	20.4

Printing negative values for ht (wrong way)
Use where ht ^= . & ht < 0 instead

Obs	case	fat_brozek	fat_siri	dens	age	wt	ht	bmi	ffw	neck	chest	abdomen	hip
252	42	31.7	32.9	1.025	44	205	.	29.9	140.1	36.6	106	104.3	115.5

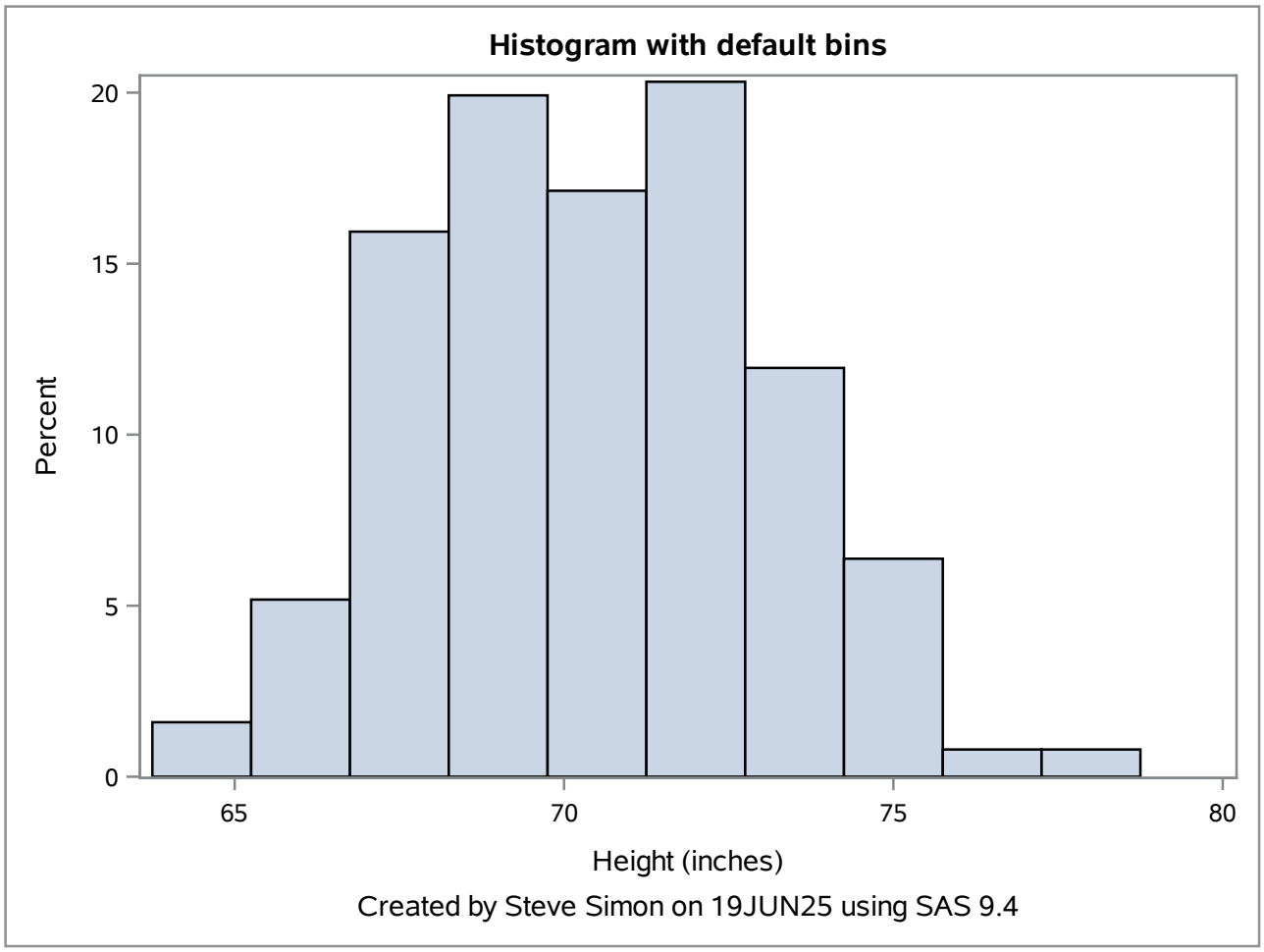
Obs	thigh	knee	ankle	biceps	forearm	wrist
252	70.6	42.5	23.7	33.6	28.7	17.4

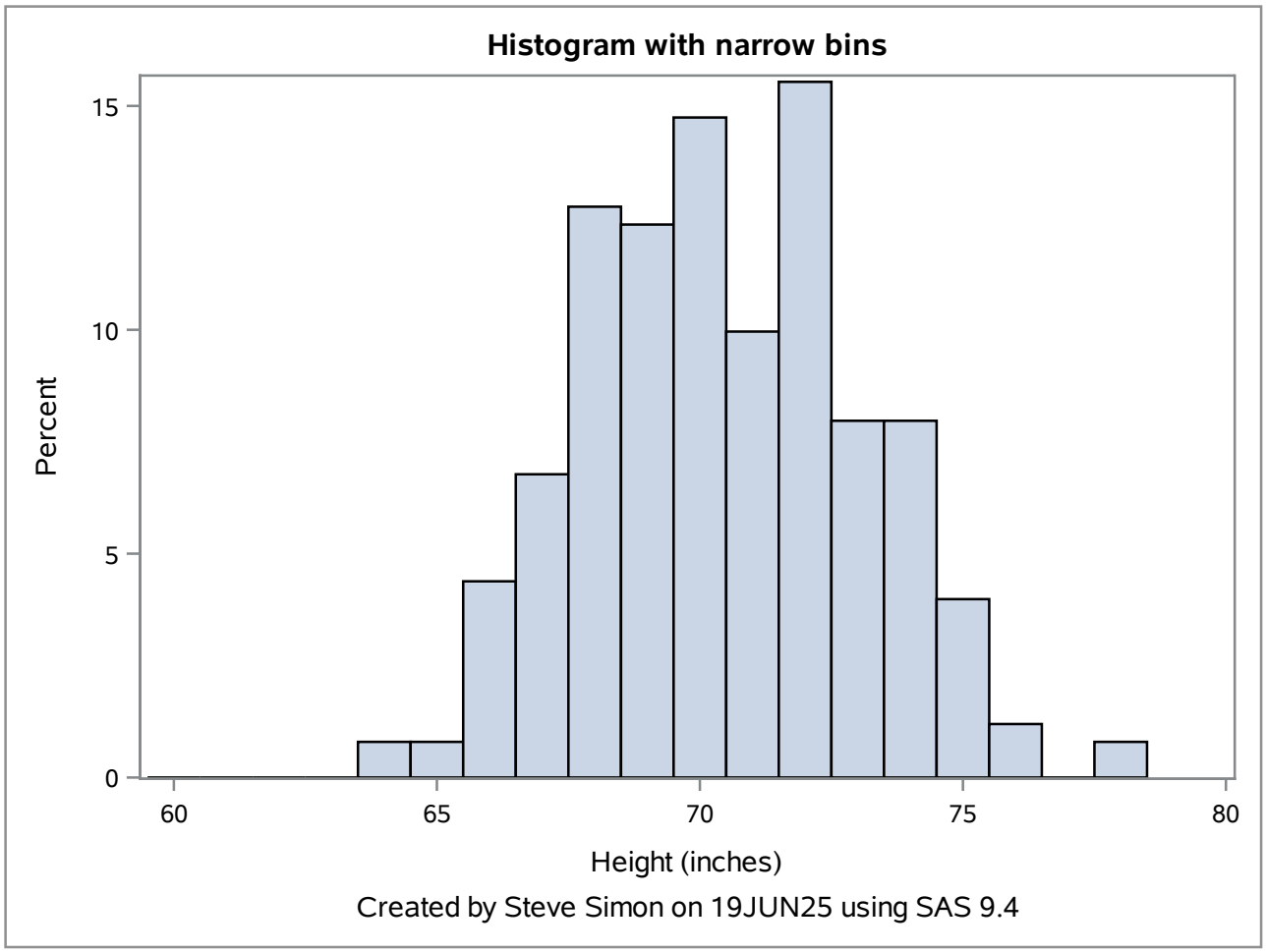
The MEANS Procedure

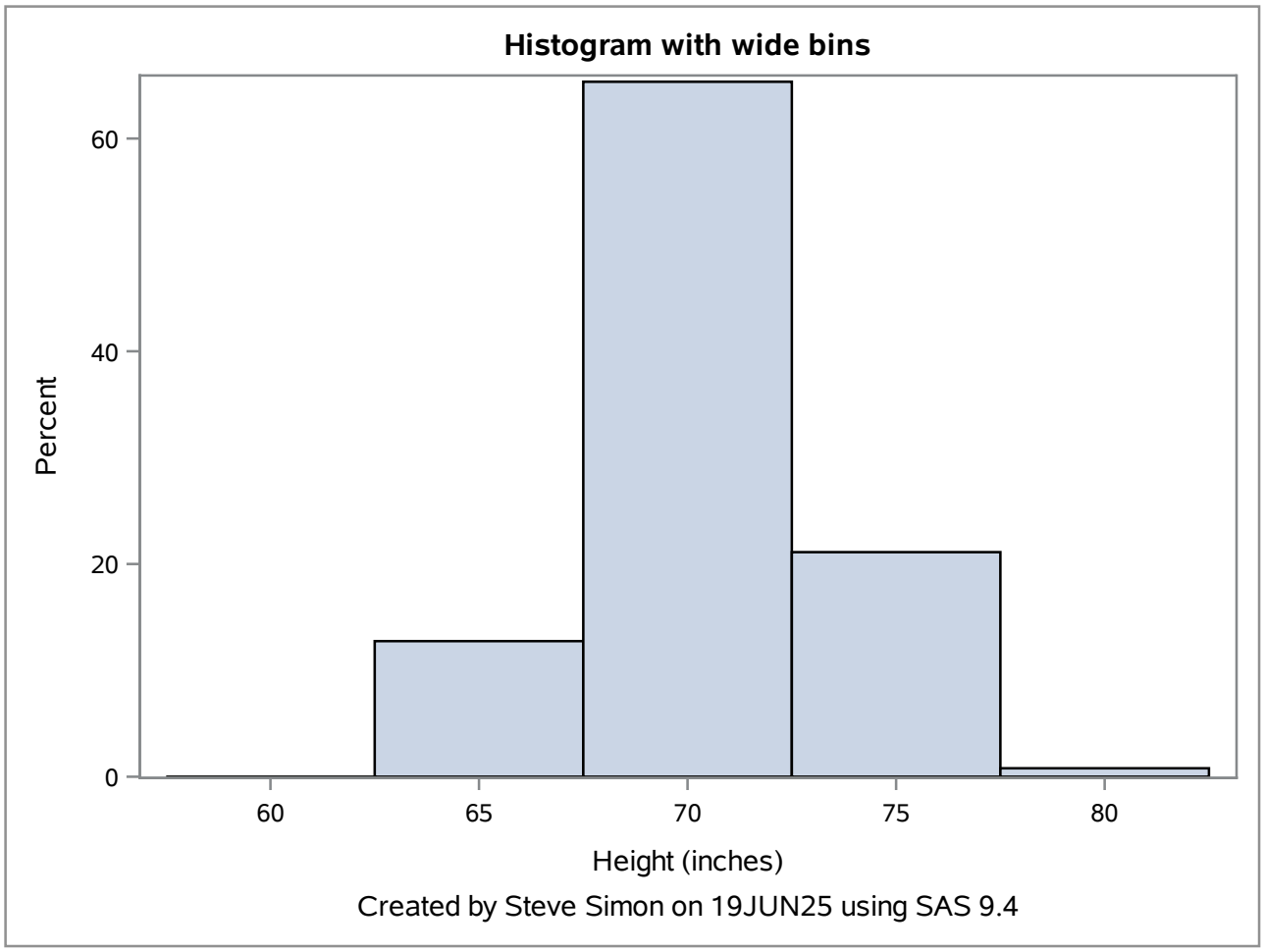
Analysis Variable : ht Height (inches)					
N	N Miss	Mean	Std Dev	Minimum	Maximum
251	1	70.3107570	2.6142960	64.0000000	77.7500000

Recalculating ht, wt, and bmi
Assuming two out of three are correct.

Obs	ht	check_ht	wt	check_wt	bmi	check_bmi
252	29.5	69.5017	205	36.9324	29.9	165.966

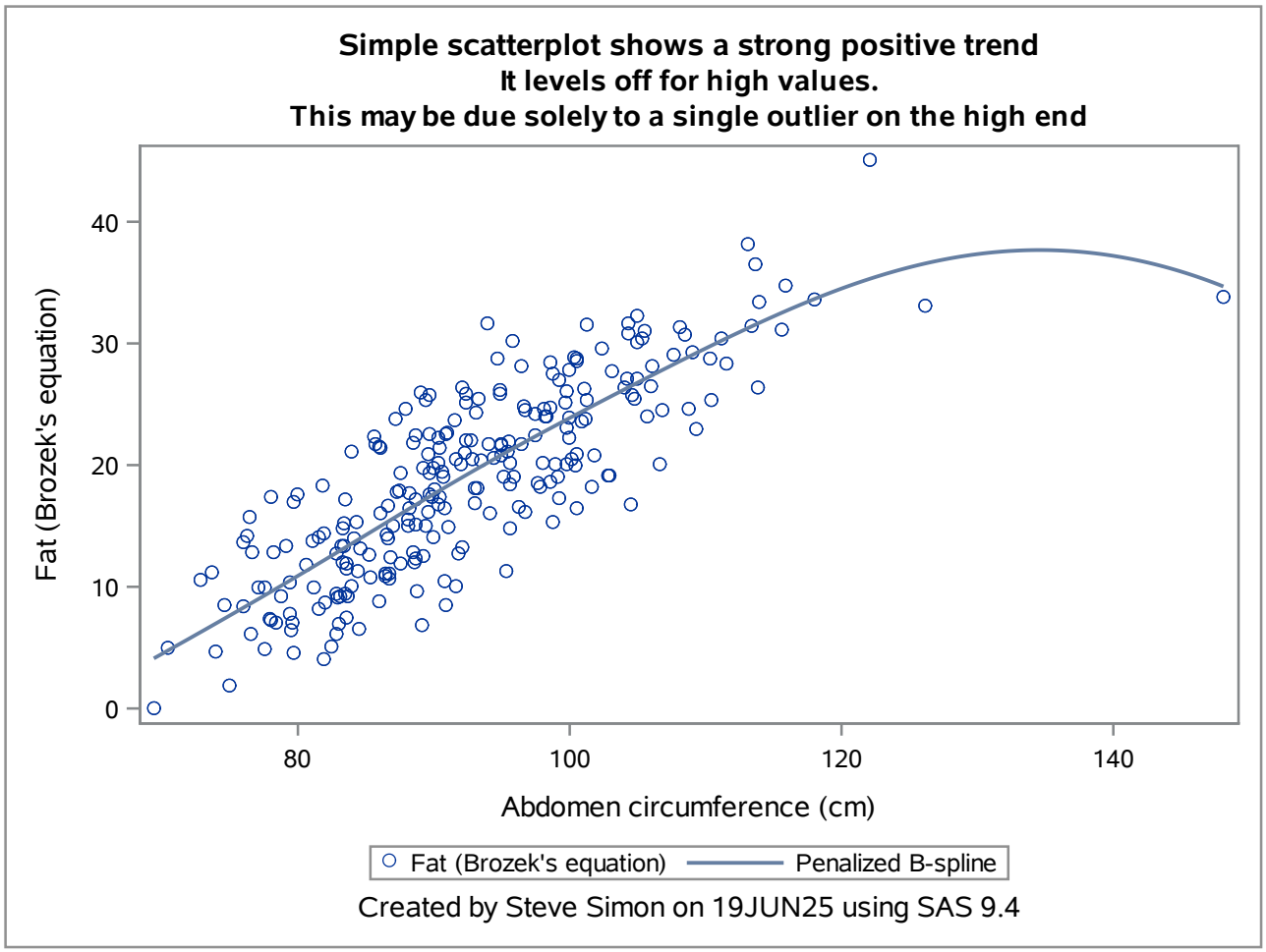

Histogram with default bins
Percent
20
15
10
5
0
65
70
75
80
Height (inches)
Created by Steve Simon on 19JUN25 using SAS 9.4


Histogram with narrow bins
Percent
15
10
5
0
60
65
70
75
80
Height (inches)
Created by Steve Simon on 19JUN25 using SAS 9.4


Histogram with wide bins
Percent
60
40
20
0
60
65
70
75
80
Height (inches)
Created by Steve Simon on 19JUN25 using SAS 9.4

Abdomen, hip, and chest show the strongest correlations

Obs	_NAME_	fat_brozek	fat_siri
1	abdomen	0.81	0.81
2	chest	0.70	0.70
3	hip	0.63	0.63
4	thigh	0.56	0.56
5	knee	0.51	0.51
6	neck	0.49	0.49
7	biceps	0.49	0.49
8	forearm	0.36	0.36
9	wrist	0.35	0.35
10	ankle	0.27	0.27


Simple scatterplot shows a strong positive trend
It levels off for high values.
This may be due solely to a single outlier on the high end
Fat (Brozek's equation)
0
10
20
30
40
80
100
120
140
Abdomen circumference (cm)
Fat (Brozek's equation)
Penalized B-spline
Created by Steve Simon on 19JUN25 using SAS 9.4