

husband and wife height example: **test H_0: mu = 115**

The response variable is D, the difference in height (in mm)

The TTEST Procedure

Set by command option h0=115

Difference: hushgt - wifehgt

Summary statistics

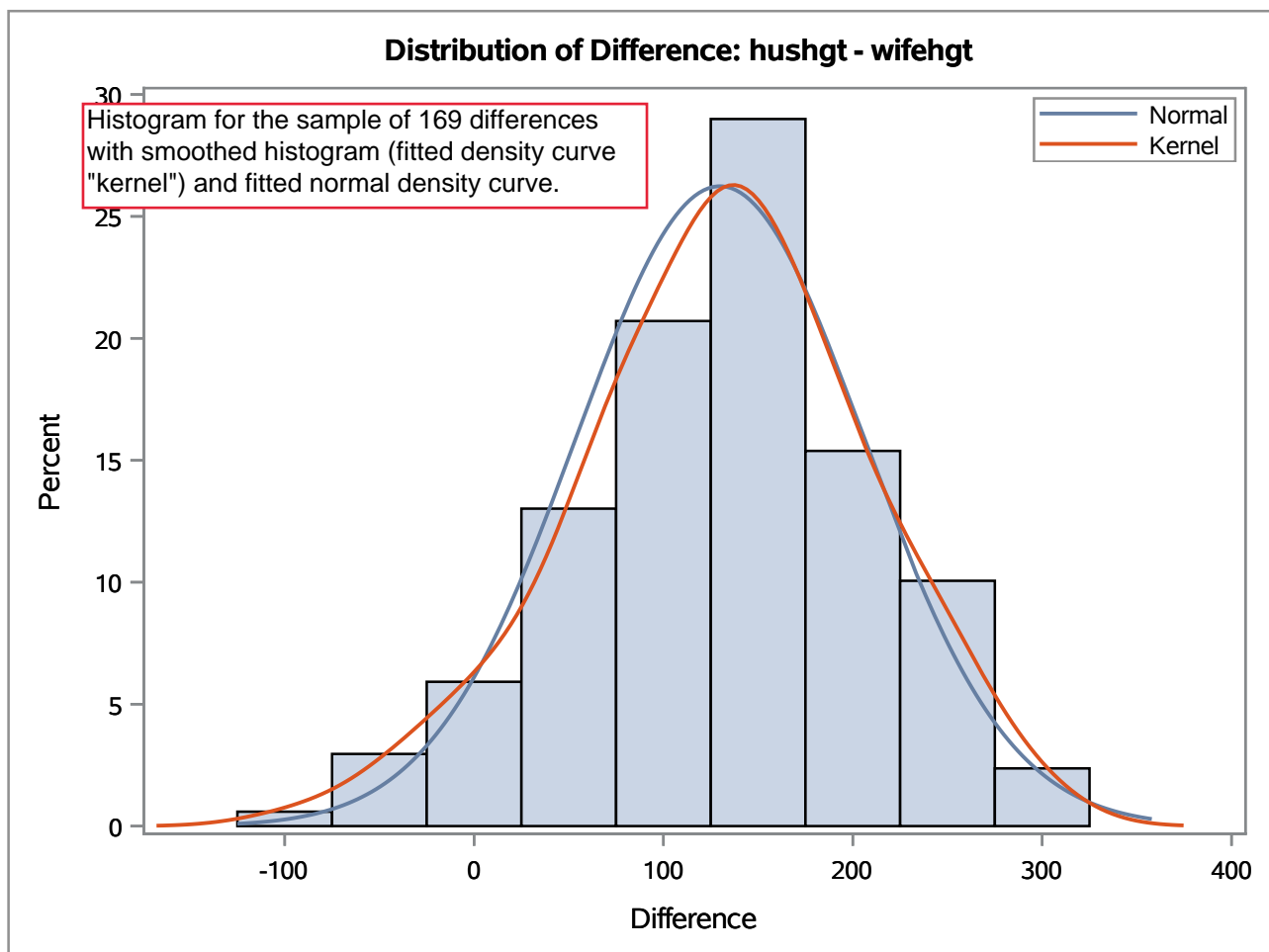
N	Mean	Std Dev	Std Err	Minimum	Maximum
169	129.8	76.0211	5.8478	-96.0000	303.0

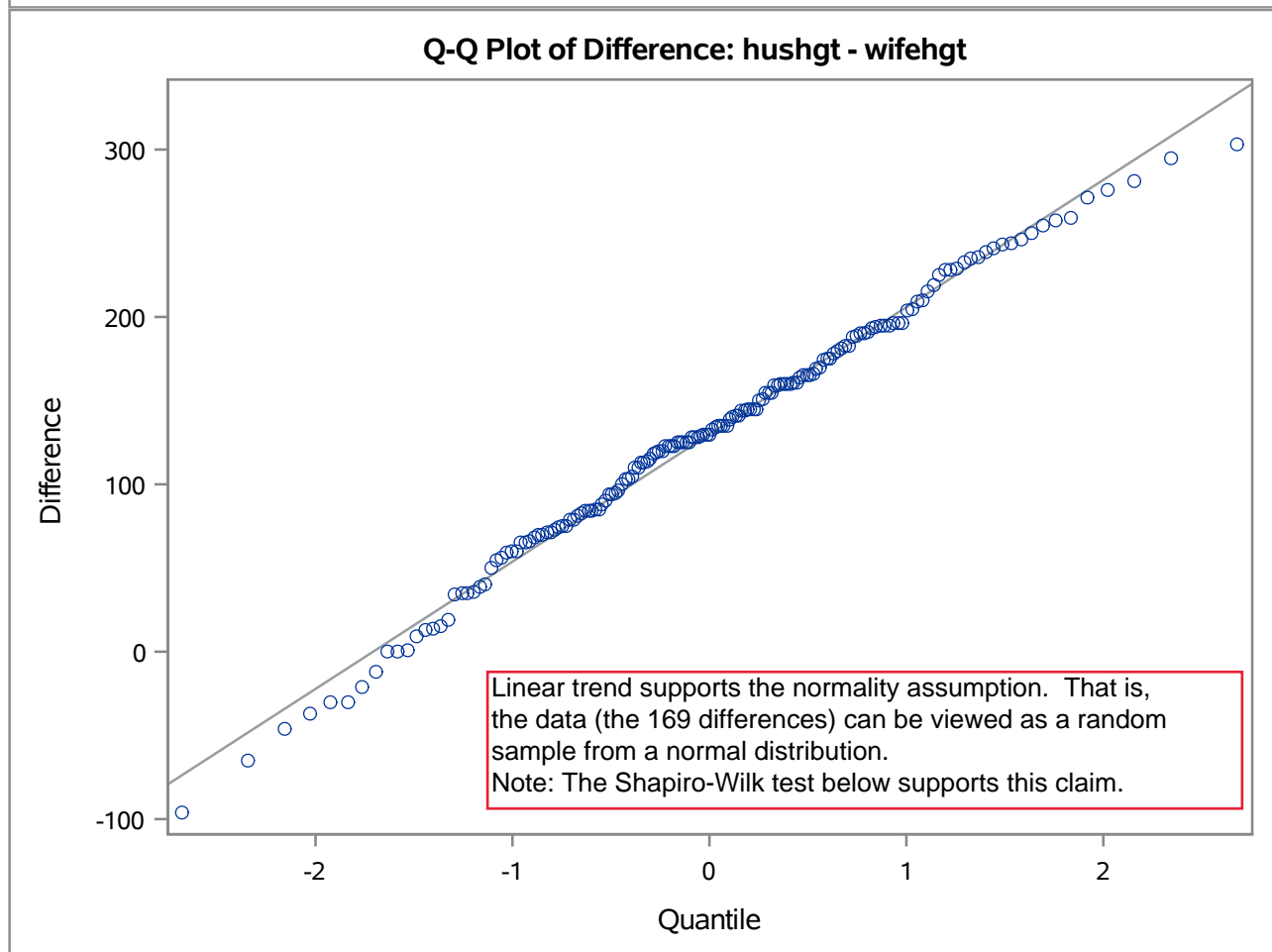
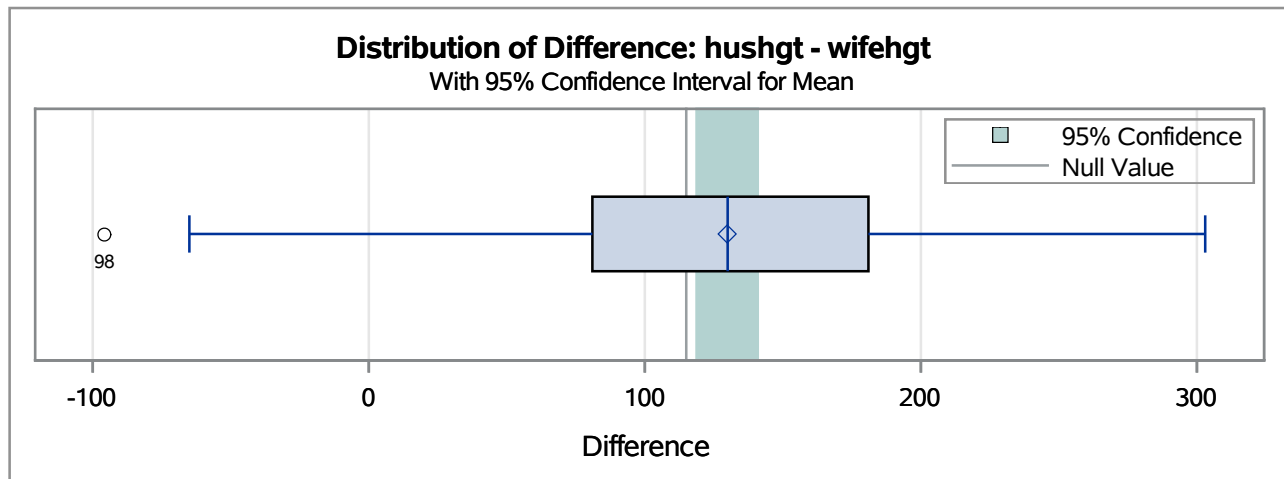
$T_{calc} = (129.8 - 115) / (5.8478) = 2.53$
 H_1: mu_D not equal to 115 (nondirectional)
 P-value = .0122
 H_1: mu_D > 115 (directional)
 P-value = (.0122) / 2 = .0061

Mean	95% CL Mean	
	Lower	Upper
129.8	118.3	141.4

95% confidence interval for mu_D
 118.3 <= mu_D <= 141.4

DF	t Value	Pr > t
168	2.53	0.0122



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The UNIVARIATE Procedure
Variable: hgtdif

Basic Statistical Measures			
Location		Variability	
Mean	129.8225	Std Deviation	76.02109
Median	130.0000	Variance	5779
Mode	125.0000	Range	399.00000
		Interquartile Range	100.00000

Tests for Normality				
Test	Statistic		p Value	
Shapiro-Wilk	W	0.99206	Pr < W	0.4787
Kolmogorov-Smirnov	D	0.055961	Pr > D	>0.1500
Cramer-von Mises	W-Sq	0.054781	Pr > W-Sq	>0.2500
Anderson-Darling	A-Sq	0.341464	Pr > A-Sq	>0.2500

Quantiles (Definition 5)	
Level	Quantile
100% Max	303
99%	295
95%	250
90%	233
75% Q3	181
50% Median	130
25% Q1	81
10%	34
5%	0
1%	-65
0% Min	-96

Test for normality assumption

The null hypothesis is that the data (the 169 differences) form a random sample from a normal distribution. The large P-value .4787 shows supports for the normality assumption.

The distribution is reasonably symmetric

med-min=226
 max-med=173
 (very slight skewness to the left)

Extreme Values					
Lowest			Highest		
Order	Value	Freq	Order	Value	Freq
1	-96	1	112	271	1
2	-65	1	113	276	1
3	-46	1	114	281	1
4	-37	1	115	295	1
5	-30	2	116	303	1

No extreme outliers.

husband and wife height difference: 95% confidence lower bound

The TTEST Procedure

Difference: hushgt - wifehgt

N	Mean	Std Dev	Std Err	Minimum	Maximum
169	129.8	76.0211	5.8478	-96.0000	303.0

Mean	95% CL Mean	
129.8	120.2	Infty

95% confidence lower bound for μ_D
 $120.2 \leq \mu_D$

DF	t Value	Pr > t
168	2.53	0.0061

