

**The Appropriateness of the Length of Insulin Needles  
based on Determination of Skin and Subcutaneous  
Thickness in the Abdomen and Upper Arm  
in the type 2 Diabetes Patient**



**WooSuk University**

**Hwang, Moon Sook**

# Research Background-1

- **Insulin should be subcutaneously injected.**
- Since SCT varies with age, gender, obesity and body regions and the needle length also have an influence on SC injection, SCT, injection technique and needle length should be considered for the insulin injection,
- However, needle length is commonly used 8 mm in the clinical practice. And this needle is too long to make a SC injection.
- So, special injection techniques needed such as 45-degree angled injection or injection with a lifted skinfold.
- These injection techniques are so complicated, So they reduce patient compliance with insulin injection, particularly aged people.

**So, they should be simplified.**

# Research Background-2

- In this context, shorter needles have been developed & recommended. On the one hand, someone insists that obese patients should use longer needle.
- **For selecting an appropriate injection site or needle length, it is required to determine the ST and SCT in Korean diabetic patients, and to clarify any factors affecting the thickness.**



# Research Background-3

- In addition,  
because repeated injection at same site may cause lipodystrophy  
it is instructed to make rotatory injections at least 1-2cm interval.  
**But almost diabetic patients don't keep to make rotatory injections**
- **So it is necessary to investigate ST & SCT  
for establishing scientific bases to make rotatory insulin  
injections in the abdomen and upper arm.**
- In the Korea, although there are some research of ST & SCT,  
they have a limitation to support rotatory insulin injections  
because they measured just at the single site.  
And there is also no research the appropriate needle length for insulin  
injection.

**So, We had research this topic.**

# Research Objectives

**The objectives of this study are as follows:**

1. to investigate into the ST & SCT of the abdomen and upper arms
2. to clarify any factors affecting the ST & SCT of the abdomen and upper arm
3. to estimate the possibility of insulin injection by needle length on the basis of measured ST & SCT



# Subjects

▶ Subjects should be diabetic patients.

▶ **Inclusion criteria are listed below:**

1. Without muscular disorder, neuropathy or injury in the abdomen and upper arms
2. Without skin problem(wart, abrasion) in the abdomen and upper arms
3. Without insulin pump in the abdomen
4. Those who do not have mass and connective ds affecting the ST
5. Those who do not have steroid treatment for a long time
6. Those who are able to understand the objectives of this study and communicate with others

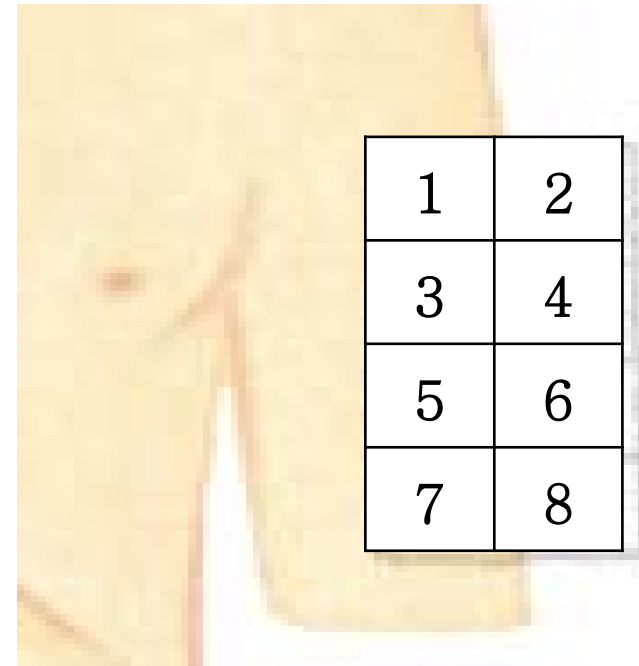
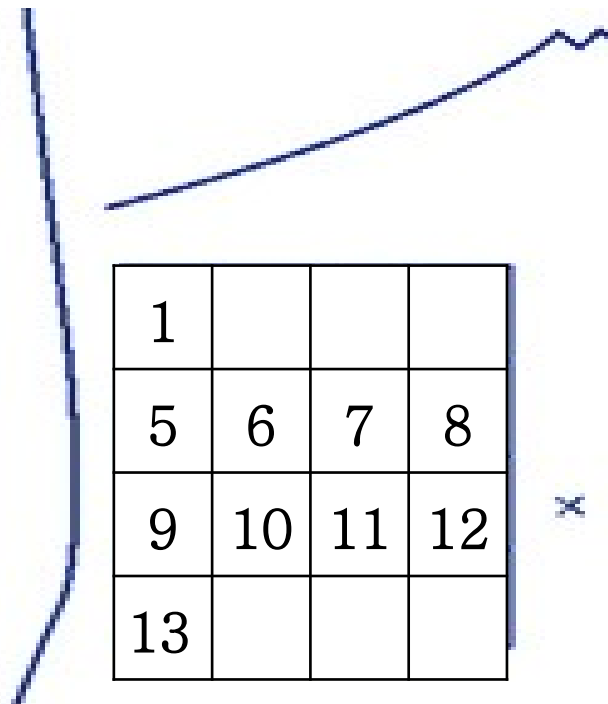
# Measurement-1

Data were collected for four days between November 2012

1. Reviewed & approved by the IRB
2. General characteristics were surveyed through questionnaires,
3. BMI was measured using a body composition analyzer
4. ST & SCT were measured using ultrasound system.
5. By needle length, the risk of ID injection is measured number of case that needle length is lower than ST, and the risk of IM injection is measured number of case that needle length is higher than the sum of ST & SCT. assuming at a right angle to the skin,

# Measurement-2

Specially,  
ST & SCT were measured at the predetermined sites  
(a total of ten sites in the abdomen and eight sites in the upper arms)  
as shown in the figure.



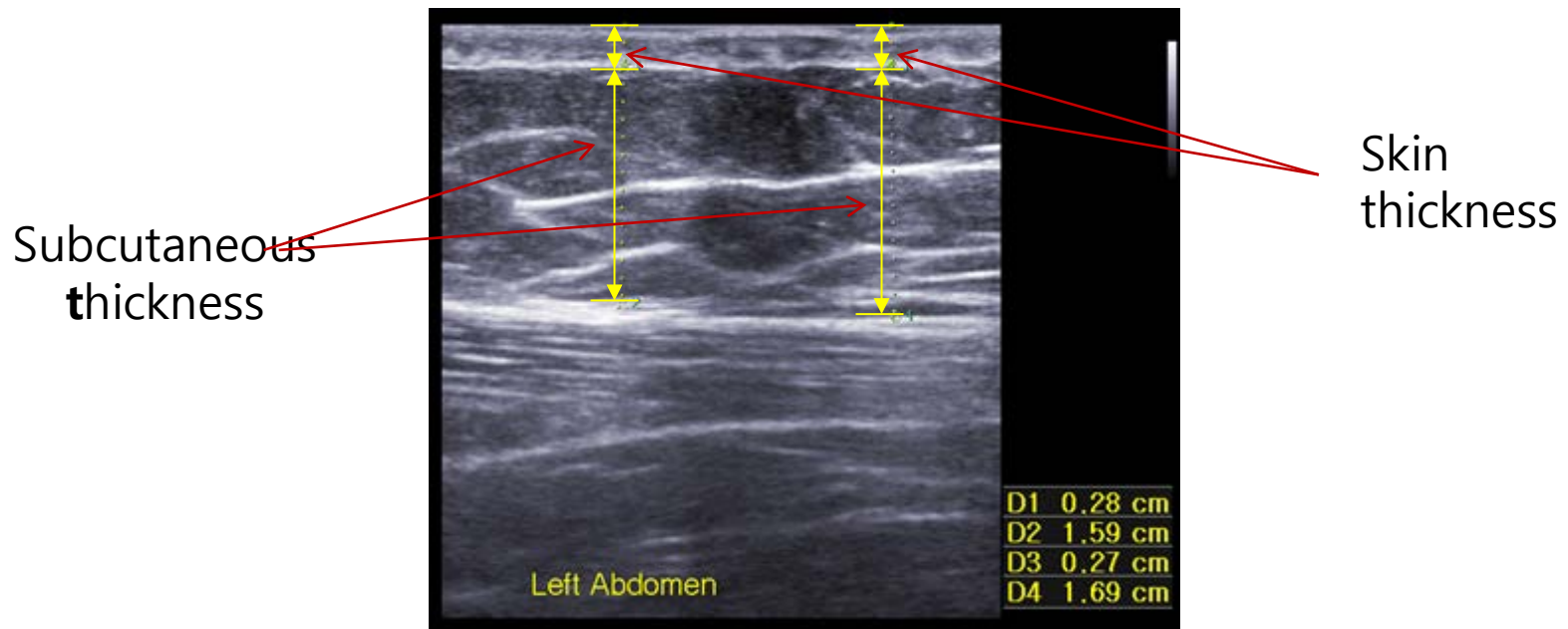
Measurement site of skin thickness and subcutaneous thickness  
on abdomen and upper arm.



# Measurement-3

- The sonographer was a licensed person having at least 3-year professional experience.
- To minimize the variability of the measurement sites, the labels of insulin injection sites were put on the abdomen & upper arms prior to measurement.
- So, to obtain the clear ultrasound images, measurements were made at 10MHz, while if the boundaries of ST & SCT are indefinitely seen, measurements were made with adjusting in the 7-12MHz.

## Axial ultrasound image is as follows



Axial ultrasound image of skin thickness and subcutaneous thickness on measurement site.



# Statistical Analysis

**Collected data were analyzed by IBM SPSS Program**

- General characteristics was used N(%) & M±SD**
- ST & SCT were measured with mm by ultrasound.**
- Differences of ST & SCT by General Characteristics were used ANOVA**
- Factors affecting ST & SCT were used multiple linear regression**
- Risks of ID & IM injection were used n(%)**



**Table 1. General Characteristics**

			(N=156)
Characteristics	Division	n(%)	M±SD
<b>Gender</b>	Male	84(53.8)	
	Female	72(46.2)	
<b>Age(year)</b>	Under 45	16(10.4)	62.15±13.91
	45 - < 65	63(40.9)	
	<b>Over 65</b>	<b>75(48.7)</b>	
<b>BMI(Kg/m<sup>2</sup>)</b>	Under weight	7( 4.5)	24.09±3.43
	Normal weight	58(37.2)	
	<b>Over weight</b>	<b>33(21.2)</b>	
	<b>Obesity</b>	<b>51(32.7)</b>	
	<b>Hyper obesity</b>	<b>7(4.5)</b>	
<b>Insulin use</b>	<b>Yes</b>	<b>51(32.7)</b>	
	No	105(67.3)	
<b>Complication of DM<sup>a</sup></b>	No	93(60.0)	
	<b>Yes*</b>	<b>62(40.0)</b>	
	Cardio Vascular Disease	13( 8.4)	
	Retinopathy	31(20.0)	
	Renal Disease	2( 4.5)	
	Cerebro Vascular Disease	8( 5.2)	
	Others	33(21.3)	
<b>Family history of DM<sup>a</sup></b>	No*	81(52.3)	
	<b>Yes</b>	<b>74(47.7)</b>	
	Father	23(14.7)	
	Mother	33(21.3)	
	<b>Sibling</b>	<b>37(23.9)</b>	
	Children	8( 5.2)	

**Table 2. Skin Thickness, Subcutaneous Thickness and Skin-Subcutaneous Thickness of Abdomen** (N=156)

Division	Total(n=156)		Male(n=84)		Female(n=72)		
	M±SD	Range	M±SD	Range	M±SD	Range	
ST	Site 01	2.21±0.44	1.30-3.30	2.28±0.44	1.30-3.20	2.11±0.43	1.30-3.30
	Site 05	2.26±0.42	1.30-3.70	2.34±0.44	1.30-3.70	2.17±0.39	1.30-3.40
	Site 06	2.38±0.45	1.00-3.60	2.42±0.40	1.60-3.50	2.33±0.51	1.00-3.60
	Site 07	2.46±0.46	1.20-3.70	<b>2.56±0.45</b>	1.20-3.70	2.35±0.45	1.30-3.40
	Site 08	<b>2.47±0.48</b>	1.30-3.80	2.53±0.45	1.60-3.80	<b>2.40±0.51</b>	1.30-3.70
	Site 09	2.14±0.41	1.10-3.70	2.20±0.41	1.30-3.70	2.07±0.41	1.10-3.40
	Site 10	2.21±0.43	1.20-3.70	2.28±0.42	1.40-3.30	2.13±0.44	1.20-3.70
	Site 11	2.39±0.49	1.30-3.80	2.50±0.46	1.30-3.70	2.26±0.49	1.40-3.80
	Site 12	2.38±0.47	1.30-3.60	2.48±0.46	1.50-3.60	2.25±0.46	1.30-3.50
	Site 13	<b>1.99±0.40</b>	1.30-3.20	<b>2.07±0.41</b>	1.30-3.20	<b>1.91±0.38</b>	1.30-3.10
<b>Total</b>	<b>2.29±0.37</b>	<b>1.34-3.29</b>	<b>2.37±0.36</b>	<b>1.49-3.27</b>	<b>2.20±0.36</b>	<b>1.34-3.29</b>	
SCT	Site 01	7.47±5.67	0.40-33.50	5.31±3.58	0.80-19.30	9.98±6.58	0.40-33.50
	Site 05	7.63±6.02	0.40-35.80	5.48±4.02	1.20-18.70	10.15±6.94	0.40-35.80
	Site 06	9.45±7.11	0.50-38.90	6.93±5.17	0.50-25.23	12.39±7.93	0.70-38.90
	Site 07	12.18±7.32	0.80-35.20	9.62±6.02	0.80-34.60	15.16±7.62	1.20-35.20
	Site 08	12.86±7.52	0.40-36.30	10.42±6.28	0.40-36.30	15.72±7.87	0.80-36.00
	Site 09	7.68±6.27	0.40-37.10	5.47±4.86	0.70-31.50	10.27±6.75	0.40-37.10
	Site 10	9.67±7.84	0.30-39.40	7.20±6.54	0.60-32.10	12.56±8.29	0.30-39.40
	Site 11	13.30±8.18	0.50-35.40	10.65±6.79	0.50-33.70	16.40±8.60	1.00-35.40
	Site 12	<b>13.96±8.10</b>	0.80-36.60	<b>11.38±6.92</b>	0.90-34.80	<b>16.98±8.37</b>	0.80-36.60
	Site 13	<b>7.26±6.33</b>	0.20-35.50	<b>5.02±4.71</b>	0.50-31.00	<b>9.88±6.97</b>	0.20-35.50
<b>Total</b>	<b>10.15±6.54</b>	<b>0.75-36.34</b>	<b>7.75±5.03</b>	<b>0.75-23.65</b>	<b>13.07±7.03</b>	<b>0.96-36.34</b>	
SSCT	Site 01	9.67±5.73	1.70-35.40	7.59±3.64	2.10-21.10	12.11±6.71	1.70-35.40
	Site 05	9.90±6.04	2.30-37.70	7.82±4.06	2.70-20.60	12.32±7.02	2.30-37.70
	Site 06	11.82±7.17	1.70-40.80	9.35±5.22	2.50-27.63	14.71±8.04	1.70-40.80
	Site 07	14.64±7.30	2.00-37.10	12.18±6.05	2.00-36.70	17.51±7.62	3.70-37.90
	Site 08	15.34±7.52	2.00-38.30	12.95±6.28	2.00-38.30	18.12±7.92	2.60-37.90
	Site 09	9.82±6.31	2.30-39.00	7.67±4.96	2.30-34.30	12.33±6.82	2.70-39.00
	Site 10	11.88±7.90	1.80-41.30	9.48±6.64	2.00-34.50	14.69±8.35	1.80-41.30
	Site 11	15.70±8.19	1.80-37.30	13.15±6.87	1.80-36.10	18.67±8.63	3.30-37.30
	Site 12	<b>16.34±8.09</b>	2.40-38.50	<b>13.86±6.97</b>	2.40-36.90	<b>19.23±8.39</b>	2.60-38.50
	Site 13	<b>9.26±6.38</b>	1.80-37.40	<b>7.09±4.82</b>	1.90-33.80	<b>11.79±7.03</b>	1.80-37.40
<b>Total</b>	<b>12.44±6.56</b>	<b>2.24-38.24</b>	<b>10.11±5.08</b>	<b>2.24-26.45</b>	<b>15.15±7.06</b>	<b>2.79-38.24</b>	

**Table 3. Skin Thickness, Subcutaneous Thickness and Skin-Subcutaneous Thickness of Upper Arm (N=156)**

Division	Total(n=156)		Male(n=84)		Female(n=72)		
	M±SD	Range	M±SD	Range	M±SD	Range	
ST	Site 1	2.27±0.43	1.40-3.20	2.43±0.41	1.40-3.20	<b>2.09±0.38</b>	1.40-3.10
	Site 2	<b>2.28±0.43</b>	1.30-3.60	<b>2.48±0.41</b>	1.50-3.60	2.04±0.32	1.30-2.90
	Site 3	2.10±0.44	1.20-3.20	2.27±0.42	1.30-3.20	1.90±0.38	1.20-2.90
	Site 4	2.12±0.42	1.10-3.50	2.26±0.44	1.30-3.50	1.96±0.32	1.10-2.70
	Site 5	1.93±0.41	1.10-3.20	2.07±0.40	1.20-3.20	1.78±0.36	1.10-2.70
	Site 6	1.87±0.39	0.80-2.90	1.98±0.36	0.90-2.90	1.74±0.38	0.80-2.90
	Site 7	1.74±0.39	0.90-2.90	1.83±0.39	1.10-2.90	1.63±0.36	0.90-2.70
	Site 8	<b>1.69±0.36</b>	0.80-2.90	<b>1.78±0.35</b>	1.10-2.90	<b>1.58±0.35</b>	0.80-2.60
	<b>Total</b>	<b>2.00±0.34</b>	<b>1.11-2.90</b>	<b>2.14±0.31</b>	<b>1.29-2.90</b>	<b>1.84±0.29</b>	<b>1.11-2.60</b>
SCT	Site 1	6.23±3.06	1.30-18.70	<b>5.11±2.66</b>	1.30-18.70	7.54±3.00	1.30-14.30
	Site 2	<b>6.43±3.10</b>	0.60-18.10	5.03±2.44	0.60-18.10	<b>8.06±2.99</b>	2.00-16.50
	Site 3	5.77±3.12	0.30-16.20	4.25±2.17	0.30-11.70	7.55±3.14	1.20-16.20
	Site 4	5.99±3.16	0.30-17.40	4.39±2.08	0.30-9.40	7.86±3.19	2.60-17.40
	Site 5	5.45±3.09	0.20-16.20	3.83±2.07	0.20-9.00	7.34±3.01	0.80-16.20
	Site 6	5.18±3.10	0.10-16.00	3.63±2.08	0.10-10.90	6.99±3.11	0.75-16.00
	Site 7	4.79±3.36	0.13-17.50	3.22±2.34	0.13-11.10	6.62±3.44	1.00-17.50
	Site 8	<b>4.17±2.93</b>	0.20-13.50	<b>2.98±2.30</b>	0.20-11.80	<b>5.57±2.98</b>	1.00-13.50
	<b>Total</b>	<b>5.50±2.68</b>	<b>0.85-12.69</b>	<b>4.06±1.79</b>	<b>0.85-9.99</b>	<b>7.19±2.56</b>	<b>2.35-12.69</b>
SSCT	Site 1	8.50±3.10	2.80-21.20	<b>7.54±2.75</b>	3.20-21.20	9.63±3.12	2.80-16.30
	Site 2	<b>8.71±3.07</b>	3.20-20.50	7.52±2.52	3.20-20.50	<b>10.10±3.09</b>	3.60-18.80
	Site 3	7.87±3.15	1.60-18.90	6.52±2.29	1.60-14.80	9.44±3.29	3.30-18.90
	Site 4	8.11±3.18	1.70-19.80	6.65±2.17	1.70-11.50	9.82±3.33	3.70-19.80
	Site 5	7.38±3.12	2.20-18.10	5.90±2.21	2.20-11.70	9.12±3.13	2.60-18.10
	Site 6	7.05±3.13	1.60-17.50	5.61±2.17	1.60-12.50	8.74±3.26	2.80-17.50
	Site 7	6.53±3.44	1.60-19.20	5.05±2.49	1.60-13.70	8.26±3.61	2.40-19.20
	Site 8	<b>5.86±2.98</b>	1.40-15.30	<b>4.76±2.40</b>	1.40-13.90	<b>7.14±3.09</b>	2.00-15.30
	<b>Total</b>	<b>7.50±2.68</b>	<b>2.30-14.85</b>	<b>6.19±1.87</b>	<b>2.30-12.21</b>	<b>9.03±2.68</b>	<b>3.84-14.85</b>

**Table 4. Skin Thickness, Subcutaneous Thickness and Skin-Subcutaneous Thickness of Abdomen and Upper Arm according to General Characteristics**

(N=156)

Characteristics Division		Abdomen			Upper arm		
		ST	SCT	ST+SCT	ST	SCT	ST+SCT
		M±SD	M±SD	M±SD	M±SD	M±SD	M±SD
Total		2.29±0.37	10.15±6.54	12.44±6.56	2.00±0.34	5.50±2.68	7.50±2.68
Gender	Male	2.37±0.36	7.75±5.03	10.11±5.08	2.14±0.31	4.06±1.79	6.19±1.87
	Female	2.20±0.36	12.95±7.00	15.15±7.06	1.84±0.29	7.19±2.56	9.03±2.68
F(p)		<b>8.285(.005)</b>	<b>28.978(&lt;.001)</b>	<b>26.617(&lt;.001)</b>	<b>37.535(&lt;.001)</b>	<b>80.374(&lt;.001)</b>	<b>60.152(&lt;.001)</b>
Age (yr)	Under 45 <sup>a</sup>	2.33±0.40	11.22±6.37	13.56±6.52	2.04±0.30	6.73±2.84	8.77±2.90
	45- < 65 <sup>b</sup>	2.31±0.36	10.35±6.31	12.66±6.37	1.98±0.31	5.69±2.78	7.67±2.81
	Over 65 <sup>c</sup>	2.26±0.38	9.894±6.84	12.15±6.81	2.00±0.37	5.13±2.52	7.13±2.47
F(p)		<b>0.547(.580)</b>	<b>0.292(.747)</b>	<b>.332(.718)</b>	<b>0.234(.792)</b>	<b>2.621(.076)</b>	<b>2.663(.073)</b>
BMI (Kg/m <sup>2</sup> )	Under Weight	1.74±0.33	4.05±2.89	5.80±2.97	1.54±0.38	3.08±1.45	4.61±1.70
	Normal Weight	2.22±0.29	7.20±5.45	9.42±5.39	1.97±0.35	4.72±2.34	6.70±2.27
	Over Weight <sup>c</sup>	2.29±0.32	10.79±5.22	13.07±5.09	2.00±0.36	5.20±2.63	7.20±2.51
	Obesity <sup>d</sup>	2.40±0.38	12.66±6.43	15.07±6.42	2.07±0.31	6.35±2.40	8.41±2.37
	HyperObesity <sup>e</sup>	2.56±0.58	19.35±6.43	21.93±6.30	2.17±0.31	9.68±2.60	11.85±2.68
F(p)		<b>7.518(&lt;.001)</b>	<b>12.969(&lt;.001)</b>	<b>14.327(&lt;.001)</b>	<b>4.792(.001)</b>	<b>10.290(&lt;.001)</b>	<b>12.345(&lt;.001)</b>
Scheffe		<b>a&lt;b,c,d,e</b>	<b>a&lt;c&lt;e</b>	<b>a&lt;c,d&lt;e</b>	<b>a&lt;b,c,d,e</b>	<b>a&lt;d&lt;e</b>	<b>a&lt;d&lt;e</b>
Insulin use	Yes	2.36±0.58	9.80±6.86	12.15±7.04	2.03±0.40	5.48±2.83	7.51±2.92
	No	2.26±0.32	10.32±6.40	12.57±6.34	1.98±0.30	5.51±2.62	7.50±2.57
F(p)		<b>2.603(.109)</b>	<b>0.218(.641)</b>	<b>.140(.708)</b>	<b>0.632(.428)</b>	<b>0.004(.950)</b>	<b>0.001(.971)</b>
Familial heredity of DM	No	2.29±0.40	9.96±7.07	12.25±7.07	1.99±0.35	5.27±2.76	7.26±2.75
	Yes	2.29±0.35	10.45±5.93	12.73±5.98	2.00±0.33	5.79±2.58	7.80±2.59
F(p)		.005(.942)	0.213(.645)	.208(.649)	0.103(.749)	1.469(.227)	1.5608(.212)
Complication of DM	No	2.25±0.39	10.39±6.97	12.65±7.00	1.98±0.35	5.65±2.87	7.63±2.88
	Yes	2.34±0.34	9.89±5.86	12.24±5.88	2.02±0.32	5.32±2.38	7.35±2.36
F(p)		<b>2.195(.141)</b>	<b>0.215(.644)</b>	<b>.143(.706)</b>	<b>0.510(.476)</b>	<b>0.546(.461)</b>	<b>.421(.517)</b>

**Table 5. Factors Affecting Skin Thickness, Subcutaneous Thickness and Skin-Subcutaneous Thickness of Abdomen (N=156)**

Variables		B	SE	$\beta$	t	<i>p</i>	Adjusted R <sup>2</sup>	F	<i>P</i>
<b>Abdomen</b>									
ST	Constant	1.424	.235		6.069	<.001	<b>.185</b>	12.472	< <b>.001</b>
	Age	-.003	.002	-.104	-1.411	.160			
	Gender(F)	<b>-.142</b>	<b>.054</b>	<b>-.192</b>	<b>2.610</b>	<b>.010</b>			
	BMI	<b>.040</b>	<b>.008</b>	<b>.371</b>	<b>5.045</b>	<b>&lt;.001</b>			
SCT	Constant	-13.420	2.941		-4.563	<.001	<b>.544</b>	61.476	< <b>.001</b>
	Age	-.018	.024	-.041	-.741	.460			
	Gender(F)	<b>5.345</b>	<b>.682</b>	<b>.430</b>	<b>-7.833</b>	<b>&lt;.001</b>			
	BMI	<b>1.140</b>	<b>.099</b>	<b>.633</b>	<b>11.501</b>	<b>&lt;.001</b>			
SSCT	Constant	-11.996	2.912		-4.119	<.001	<b>.558</b>	64.942	< <b>.001</b>
	Age	-.021	.024	-.047	-.862	.390			
	Gender(F)	<b>5.203</b>	<b>.676</b>	<b>.416</b>	<b>7.701</b>	<b>&lt;.001</b>			
	BMI	<b>1.180</b>	<b>.098</b>	<b>.651</b>	<b>12.022</b>	<b>&lt;.001</b>			





**Table 5. Factors Affecting Skin Thickness, Subcutaneous Thickness and Skin-Subcutaneous Thickness of Upper Arm (N=156)**

Variables		B	SE	$\beta$	t	p	Adjusted R <sup>2</sup>	F	P
<b>Upper Arm</b>									
ST	Constant	1.284	.202		6.353	<.001	<b>.274</b>	20.118	< <b>.001</b>
	Age	-.002	.002	-.086	-1.243	.216			
	Gender(F)	<b>-.283</b>	<b>.047</b>	<b>-.418</b>	<b>6.027</b>	<b>&lt;.001</b>			
	BMI	<b>.029</b>	<b>.007</b>	<b>.293</b>	<b>4.215</b>	<b>&lt;.001</b>			
SCT	Constant	-.614	1.146		-.536	.593	<b>.632</b>	87.835	< <b>.001</b>
	Age	<b>-.029</b>	<b>.009</b>	<b>-.152</b>	<b>-3.101</b>	<b>.002</b>			
	Gender(F)	<b>3.345</b>	<b>.266</b>	<b>.621</b>	<b>12.575</b>	<b>&lt;.001</b>			
	BMI	<b>.403</b>	<b>.039</b>	<b>.516</b>	<b>10.434</b>	<b>&lt;.001</b>			
SSCT	Constant	.670	1.176		.570	.571	<b>.613</b>	81.290	< <b>.001</b>
	Age	<b>-.031</b>	<b>.010</b>	<b>-.162</b>	<b>-3.219</b>	<b>.002</b>			
	Gender(F)	<b>3.060</b>	<b>.270</b>	<b>.569</b>	<b>-11.315</b>	<b>&lt;.001</b>			
	BMI	<b>.503</b>	<b>.069</b>	<b>.645</b>	<b>7.276</b>	<b>&lt;.001</b>			



**Table 6. Possible ID and IM risk based on Needle Length and BMI(90°Insertion, no raised skin fold)**  
(N=156)

Needle Length	Risk of ID n(%)	Risk of IM					
		Total	Under Wt (n=7)	Normal Wt (n=58)	Over Wt (n=33)	Obesity (n=51)	Hyper Ob (n=7)
<b>Abdomen</b>							
4 mm	0(0.0)	3( 1.9)	2(28.6)	1( 1.7)	0( 0.0)	0(0.0)	0(0.0)
5 mm	0(0.0)	8( 5.1)	3(42.9)	5( 8.6)	0( 0.0)	0(0.0)	0(0.0)
6 mm	0(0.0)	20(12.8)	4(57.1)	15(25.9)	0( 0.0)	1(2.0)	0(0.0)
8 mm	0(0.0)	45(28.8)	5(71.4)	29(50.0)	4(12.1)	7(13.7)	0(0.0)
<b>Upper Arm</b>							
4 mm	0(0.0)	5( 3.2)	3(42.9)	1(1.7)	1( 3.0)	0(0.0)	0(0.0)
5 mm	0(0.0)	32(20.5)	5(71.4)	16(27.6)	9(27.3)	2(3.9)	0(0.0)
6 mm	0(0.0)	55(35.3)	5(71.4)	30(51.7)	11(33.3)	9(17.6)	0(0.0)
8 mm	0(0.0)	92(58.9)	7(100.0)	43(74.1)	20.(60.6)	21(41.2)	1(14.3)

# CONCLUSION

Thickness	Abdomen	Upper arm
ST	2.29mm	2.00mm
SCT	10.15mm	5.50mm

Affecting factor	Abdomen	Upper arm
ST	Gender, BMI	Gender, BMI
SCT	Gender, BMI	Gender, BMI, Age

- ▷ **Insulin fluids may not appear to be IDly injected into the abdomen and upper arms at any needle lengths, -The risk of IM injection is likely to increase with longer needles and lower BMI.**
- ▷ **This study findings indicate that 4mm needles will deliver insulin subcutaneously for Korean diabetic patients.**

**If you have a Question, Please contact me by E-mail.**

**My E-mail number is [msyellow45@hanmail.net](mailto:msyellow45@hanmail.net)**

**Thank you very much for your attention**

