

A COMPARISON OF CERTAIN BODY
MEASUREMENTS TAKEN WITH AND WITHOUT
A FOUNDATION GARMENT

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By

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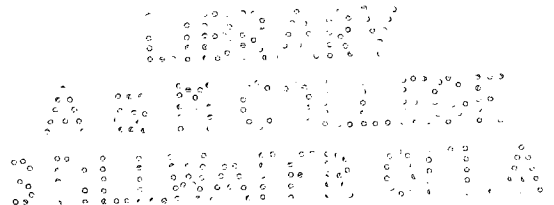
Bachelor of Science

University of California

Berkeley, California

1940

Submitted to the Department of Household Arts
Oklahoma Agricultural and Mechanical College
In Partial Fulfillment of the Requirements
For the Degree of
MASTER OF SCIENCE
1941



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Acknowledgment

Grateful appreciation is extended to the many girls in Willard Hall at the Oklahoma Agricultural and Mechanical College who gave their time and cooperation to being measured for this study.

A special acknowledgment of appreciation is made to Miss Dorothy Saville, Associate Professor, Department of Household Arts for her personal interest and inspiration and her assistance in organizing and checking this thesis.

TABLE OF CONTENTS

	Page
Introduction.	1
Review of Literature.	2
Procedure	7
Instruments used	7
Placing landmarks.	8
Methods of taking measurements	11
Discussion.	17
Summary	29
Literature Cited.	31

Introduction

(A foundation garment is usually worn for two reasons: to improve appearance and to promote good health.) In this study an attempt has been made to determine to some extent what actual effect a foundation garment has upon certain measurements of college women.

(It is highly desirable for a foundation garment to be, above all things, well fitted to the individual. A well fitted garment is correctly proportioned to allow for the variations in length and width needed by different women.) There should be no constriction of the waist or hips to crowd the vital organs that lie in the abdominal cavity. A well fitted garment always gives a smooth appearance when worn.

(Undesirable qualities to be guarded against in a foundation garment are: a garment causing constriction of the waist or hip which is conducive to ill health; a garment that permits the soft flesh at the waist and at the thighs to roll or bulge above and below the garment; a garment too long or too short in length or width; and a garment which is fitted so that the top has a tendency to roll down and form an unsightly bulge at the waist line.

Actual measurements of college women were taken when they were wearing a girdle and when they were not wearing a girdle. The results found were analyzed in order to find how the measurements compared with the ideal which includes all the desirable qualities of a foundation garment listed above.

Review of Literature

A lady of two generations ago attributed her excellent posture to compulsory commitment to a straight laced corset whenever she did not sit or stand correctly. A good corset and a good mother might be thanked by this lady who maintained excellent posture at an age when most women display dowager humps and misplaced abdomens. It is generally conceded that a correctly fitted garment is a definite aid in posture training.¹

The answer to the question of whether a woman would be healthier if she did or did not wear a foundation garment depends upon a number of factors such as support of clothing, proper exercise involving trunk muscles, and child bearing. The flexible garments generally worn today are considered desirable.²

The average woman who wears clothes suspended from the shoulders or hips, is physically active, and who will allow at least two years between pregnancies will be healthier and happier without a corset. For those who wear skirts supported at the waist, a light corset will be found very helpful.³

The practice of having garters attached to the corset is desirable for two reasons. It is superior to that of

¹Jesse Feiring Williams, Personal Hygiene Applied, 4 ed. (Philadelphia, 1931), p. 365.
Jeanette Eaton, "Corset Comfort", Parents Magazine, 10 (April, 1935), pp. 74-75.

²Williams, Personal Hygiene Applied, p. 365.

³Ibid., p. 366.

rolling hose for it permits better circulation of the blood, and it also increases the tendency of the person to stand away from the corset and, as a result, maintain good posture. The point of attachment should be at the side of the hips rather than in front. The front pull exerts a traction upon the pelvis tending to produce an increased lumbar curve, or hollow back, with all the attendant ills and discomforts.¹

Dr. D. M. Dunn² is quite emphatic in stating that women should wear foundation garments. He believes that a corset supports and reinforces muscles, particularly abdominal muscles, which have a tendency to sag. So for this reason, it is better for a woman's health for her to wear a foundation garment and be sure of correct posture than to try doing without and suffer ill effects.

Jeannette Eaton³ believes that all women and girls should wear a corset unless they exercise continuously and have perfect posture. Obviously she includes a very limited number of people in this group. She emphasizes the importance of proper support for the abdomen. Not only does a corset prove directly healthful in maintaining correct posture, but in keeping the curves in the right places, the corset will indirectly prevent bad dieting to reduce what merely needs to be supported through correct corseting.

¹Williams, Personal Hygiene Applied, p. 366.

²Anonymous, "Woman's Friend, The Corset", Literary Digest, 71 (November 5, 1921), p. 20.

³Eaton, "Corset Comfort", pp. 74-75

The human figure is made up of bones, muscles, flesh and organs. In proper corseting, all these parts must be considered. No amount of corseting can change the bony structure of an individual. Flesh can to some extent be molded and redistributed. Naturally soft flesh is much more easily redistributed than firmer flesh. In fitting a foundation garment, care must be taken to avoid bulges which occur particularly at the waist or on the thighs. In addition to being unsightly, bulges tend to break down tissues. Once the tissues are broken down they will not return to their original condition. Sagging or relaxed muscles cause flesh to spread. For women who will not exercise, a foundation garment may perform from the outside the function which should normally be performed by the muscles.¹

The abdomen is the largest cavity in the body. Within it lie the vital organs which need to be protected and supported. The walls of the abdomen are lined with muscles and fasciae, the protective tissues. Their function is to support the abdomen and hold the organs in position. The only bony support for these organs is the spine. The pelvis and the thorax are for the protection of the organs within the abdominal cavity. The organs in the abdominal cavity include the stomach, small and large intestines, liver, pancreas, and the reproductive organs. In back of the abdomen

¹Women's Wear Daily, p. 10

are the kidneys. All of these organs depend upon muscles for support in order to maintain their proper positions and to function correctly.¹

Poor posture identified by a protruding abdomen, sway back, and humped shoulders usually indicates relaxed muscles. With advancing age the condition becomes increasingly aggravated. The effect of poor posture is displacement of vital organs and a strain on the spine. The ideal remedy for this condition is exercise to restore muscle tone. Corsetting cannot correct faulty posture, but it can relieve strain on the spinal column and help hold the vital organs in their correct positions.²

Corsets and girdles are fitted according to waist measurement and hip development. Hip development is defined as the difference in circumference between waist and hip measurements. The average measurement according to garment manufacturers is a nine inch hip development.³ Variations from the average hip development are the straight hip which is seven inches larger than the waist and the full hip which is eleven inches larger than the waist. Variations due to poor posture cannot be helped to any great extent by corsetting. However the wearer may be given a feeling of support.⁴

¹Women's Wear Daily, p. 6.

²*Ibid.*, pp. 3-4.

³*Ibid.*, p. 10.

⁴*Op. cit.*

The materials which go into the corset or girdle should all be strong in order to withstand hard wear and frequent launderings. Because women want lovely things even to the point of sacrificing durability, the garments should be as beautiful as possible in line and fabric. The materials used in foundation garments should be preshrunk and color fast. The dyes used must be free from any substance that produces skin irritations. All bones and fastenings incorporated into the foundation garment should be well covered to prevent the metal from touching the wearer or rubbing the skin in a way that will cause irritation.

The amount of satisfaction received by the wearer of a foundation garment is directly related to the correctness of fit of the garment. All garments should be fitted before they are purchased to assure ease of movement in walking, sitting, and bending.

Procedure

Measurements of 100 Oklahoma Agricultural and Mechanical College women were included in this study. The individuals varied in weight from 95 pounds to 170 pounds. The average was 127.2 pounds. The average age of the group measured was 20.1 years with a range from 17 to 27 years. The height of the girls varied from 59 inches to 69 inches; 64.61 inches was the average.

The procedure followed in taking the measurements was adapted as far as possible from the methods for taking measurements as set up by the Bureau of Home Economics.¹

In order to check the investigator's accuracy in taking the measurements, several girls were measured twice and the results compared.

For the first series of measurements the subjects wore light weight panties which did not constrict the waist or the hips. The second series of measurements was taken with the subject wearing a girdle or corset. The foundation garment was one belonging to the subject and one she was accustomed to wearing.

Instruments Used

Instruments used in taking body measurements included: sixty inch linen tape; instrument for determining hip level

¹O'Brien, Ruth and Meyer A. Gershick, Children's Body Measurements for Sizing Garments and Patterns, U.S. Department of Agriculture. Miscellaneous Publication No. 365, 1939, p. 21.

and waist level in number of inches from the floor; instrument for measuring the width of hips taken from the side and from the front of the individual; and a skin pencil. The instrument used for determining waist and hip levels was constructed of an ordinary yardstick set in a base in an upright position. An adjustable arm perpendicular to the yardstick was used to locate the exact position of the waist and hip levels. The instrument used for measuring hip widths consisted of a carpenter's square with an adjustable arm perpendicular to one arm of the square and parallel to the other arm.

Placing of Landmarks.

The landmarks used for obtaining body measurements were: waist level, three hip levels, upper leg level, and underarm line corresponding to side seam line in clothing.

"The waist level used lies at the lower edge of the lowest rib and is found by feeling the sides of the body in line with the armpit. This waist level corresponds very closely to the natural waist which can be seen when the side profiles of the body are slightly concave . . . a waist level based on the lower edge of the lowest rib found by feeling at the side of the body can be used equally well in all age groups. This waist level also provides for the maximum depth of a garment from the waist to the crotch level."¹

¹O'Brien and Gershick, Children's Body Measurements for Sizing Garments and Patterns, p. 21.

To locate the waist, the observer knelt in front of the subject and felt the right and left sides, "using the index fingers to press against the sides in line with the armpits. The hands are held with the palms directed toward the floor. The fingers are extended and together. The thumb side of the middle joint of the index finger is placed against the subject. When the lower edge of the lowest rib is felt on the back surface of the index finger, the level of the midline of the index finger is taken as the waist level. Without displacing the skin, the level is marked" with a small horizontal line "in line with the arm pit on the right and left sides."¹

"The level of the hip is placed at the most prominent bony point in the region of the trochanter major. The level is determined independently for the right and left sides."²

"The extended index and middle fingers of the observer's right hand are used to feel the region of the trochanter. This is done while the observer squats with eyes approximately at the level of the trochanter. The direction of palpation is from below upward. On well-developed, muscular individuals and when excessive fat pads are present, it will take some time to find the proper level. The subject may be asked to bend slightly forward or rotate the femur by turning the toes laterally and by pivoting on the heel. A rounded

¹O'Brien and Gershick, Children's Body Measurements for Sizing Garments and Patterns, p. 21.

²Op. cit.

region is felt rather than a point. The midpoint of this region is marked"¹ . . . with a short horizontal line. This point is referred to as the natural hip line in this study.

In placing the side seam line, "the subject's position is normal erect posture with feet together. The observer asks the subject to relax his right arm and shoulder and permit him to place the arm in the desired position. The forearm is bent at an angle of 90° to the upper arm, and the hand is extended directly forward. While the observer steadies the subject's shoulder, he moves the entire arm thus bent, an inch or so directly forward. The observer, still steadying the shoulder, then grasps the bent elbow and tips it slightly upward until the underarm, midpoint is just visible when the observer's eyes are at the level of the midtrunk. The object of this detailed procedure is to expose the underarm midpoint without moving it significantly from its position when the arm hangs loosely at the side."² The line corresponding to the side seam line was found by extending a plumb line from the center of the underarm pit to the floor. A mark was drawn crossing the waist line, natural hip line, and thigh line at the points where the center of the plumb line crossed them.

A point seven inches below the waist on the side seam line was marked. A mark was placed on the side seam line

¹O'Brien and Gershick, Children's Body Measurements for Sizing Garments and Patterns, pp. 21-22

²Ibid., p. 24.

at the point where the largest hip circumference measurement was found. The thigh at its largest circumference was marked on the side seam line.

Methods of Taking Measurements.

The following measurements were taken when the subject was not wearing a girdle: height of waist, right and left sides; height of hips, right and left sides; girth of waist; girth of hips seven inches below waist level, at the trochanter level, and at the maximum girth of hip; maximum girth of thigh; measurement from waist level to trochanter region, to maximum girth of hip and to maximum girth of thigh; back arc of hips; and width of hips taken from the front and from the side of the subject.

Measurements taken with the subject wearing a girdle included: girth of waist; girth of hips seven inches below the waist level, at the trochanter region, and at the maximum girth of hips; measurement from waist to trochanter region and to maximum girth of thigh; back arc of hips; width of hips taken from the front and from the side of the subject; and measurement from waist level to bottom of girdle.

The measurement for height of waist was made at the preliminary landmarks set at the waist. "The subject stands erect facing the observer with feet together. His weight is evenly distributed between the two feet and he is cautioned against shifting his weight from one foot to the other and

from heels to toes and vice versa. His arms hang loosely at the side, somewhat toward the back."¹ The observer stood at the side of the subject. The measurement was taken with the yardstick equipped with an adjustable arm which touched the landmark at the waist. The measurement was taken on the right and left sides.

The height of hips was measured on the right and left sides in the region of the trochanter. The position of the subject and of the observer was the same as that for taking the measurement of the height of waist. The subject's arms were slightly to the back of the landmarks on the point of the trochanter.

In taking the girth of waist measurement "the subject's position is his normal erect posture with feet together. The observer is in front of the subject. The tape is placed around the body at the waist level with the upper border of the tape passing through the landmarks at the waist level. The zero point is at the center front. The measurement is taken without constriction. The subject breathes normally. The middle value between the largest and smallest reading is recorded."² This measurement was taken both when the subject was wearing a girdle and when she was not wearing a girdle.

"When the girth of hips measurement is taken, the subject's position is his normal erect posture with feet

¹O'Brien and Gershick, Children's Body Measurements for Sizing Garments and Patterns, p. 22.

²Op. cit.

together and hands on the hips. The observer is at the right side of the subject. When the reading is made the eyes are at hip level. The tape is passed around the body so that the upper border passes through the landmarks made for the average hip level. The tape should be held horizontal to the floor. The measurement is taken without constriction."¹

Hip measurements were taken at seven inches below the waist, at the trochanter region and at the largest circumference measurement of the hip. The landmark for the largest part of the hip was placed at the time this measurement was taken since the point could not be accurately determined in any other manner. This point varied greatly from one individual to another. The three hip measurements were taken twice: when the subject was wearing a girdle and when she was not wearing a girdle.

The length from waist to hip was measured with the subject in normal erect posture. The observer's eyes were at the level of the midtrunk. "The zero point of the tape is placed at the landmark of the . . . waist level."² The tape was placed along the side seam line and readings were made at the landmarks placed at the trochanter region and at the point on the largest circumference of the hips. These measurements were taken on the right side, with and without a girdle.

¹O'Brien and Gershick, Children's Body Measurements for Sizing Garments and Patterns, p. 24.

²Ibid., p. 25.

The maximum girth of thigh measurement was taken with the subject in her normal erect posture. "The feet are parted slightly to permit the tape to pass freely between the thighs. The observer is at the subject's . . . side with eyes at the level of the folds of the buttocks. The tape, which is placed around the thigh with the upper border at the level of the fold of the buttock, is horizontal to the floor. The zero point is situated directly in front of the observer at the side of the subject's thigh. The observer passes in front of the subject after the tape is placed to see that the tape is in the proper position. If the fold of the buttock is not distinguishable, it can be found by pressure on the right buttock. However, several folds may be so produced and the major one of these must be selected provisionally. The tape is passed over the thigh at its largest point. The measurement is taken without constricting the thigh."¹ This level was marked on the side seam line.

With the subject maintaining the position described above, a measurement was taken from waist level to maximum girth of thigh level. The zero point of the tape was placed at the waist level, and the tape was laid along the side seam line. The reading at the level of the maximum girth of thigh was recorded. The measurement was taken on the right side. The subject did not wear a girdle.

¹O'Brien and Gershick, Children's Body Measurements for Sizing Garments and Patterns, p. 25.

When the back arc of hip measurement was taken, "the subject stands erect with feet together, weight evenly distributed, and hands on the hips. The observer squats back of the subject with eyes at hip level. The zero point of the tape is placed at the [natural]¹ hip level of the left side [at the point of intersection with the side seam line.]² The upper border of the tape lies in a horizontal plane. The reading is made on the right thigh at the [natural]³ hip level, the measurement being taken without constriction."⁴ This measurement was taken twice.

When the width of hip measurements were taken, the subject stood erect, with feet together and hands on the hips. For the front width of hip measurement, the observer stood facing the subject. The square with the adjustable arm was held in a plane parallel to the floor. The inner surfaces of the arms of the square were placed on the natural hip landmarks. The adjustable arm was moved to the hip point without exerting pressure on the skin. The reading was taken as the distance between the inner surfaces of the two arms of the measuring device. A width of hip measurement was taken with the observer standing at the right side of the subject. The square was held on a plane parallel to the floor with the central portion placed on the point of the natural hip level. The arms were adjusted to touch the

1,2,3, Brackets my own.

⁴O'Brien and Gershick, Children's Body Measurements for Sizing Garments and Patterns, p. 23.

subject in front and in back without pressure on the skin. The reading was recorded as before. Both measurements of width of hips were taken twice.

The girdle as worn by the subject was measured along the side seam line from waist level to bottom of the girdle.

Comments made by the subjects concerning comfort and fit of girdle were recorded. The type of girdle worn was also recorded.

Discussion

The 100 women measured in this study were classified in order of their weight. They were then divided into ten groups; their weight being used as the basis of the division. The number included in each group varied in order that all individuals of the same weight would be in the same group. In one group all of the individuals were of the same weight and the greatest range in weight of any group was twenty pounds. The lowest and highest weight groups included the widest ranges in weight. The averages of all measurements within each group were calculated and were used as the basis for comparisons. (Table 1.)

There was a tendency for the girth of waist measurement to be increased when a girdle was worn. (Figure 1.) The increase in measurement was very slight, not over one quarter of an inch, except in group seven where the increase amounted to an inch and one quarter. In three of the groups the measurement was decreased by not more than a quarter of an inch.

With a few exceptions, a girdle tended to decrease the hip circumference at the trochanter region and at the hip level seven inches below the waist. The decrease was very slight however. This decrease in girth of hip due to wearing a girdle was most marked at the largest hip circumference (Figure 2.)

Table I. The average of all measurements in each of the ten groups of the 100 Oklahoma A. & M. College women divided according to their weight.

Group Number	Number in Group	Weight Range	Weight	Height	Age
1	10	95-109	104.70	62.24	20.4
2	11	110-115	112.45	63.32	19.7
3	7	116-119	117.43	63.14	20.4
4	9	120	120.00	64.82	21.3
5	12	122-125	123.66	65.42	20.0
6	10	126-129	126.90	64.88	20.0
7	12	130-134	131.25	64.50	20.0
8	10	135-137	135.50	65.70	20.0
9	9	138-147	142.11	66.33	19.4
10	10	150-170	158.00	65.73	19.8

Table I. (continued).

Group	Girth of Hips						Width of Hips				Back Arc of Hips	
	7" Below Waist		Natural Hip		Largest Circumference		Side		Front		No Girdle	No Girdle
	No	Girdle	No	Girdle	No	Girdle	No	Girdle	No	Girdle		
1	34.49	34.17	34.14	34.48	35.26	34.67	7.93	8.00	12.39	12.39	18.15	17.95
2	35.21	35.04	36.68	35.81	37.10	36.27	8.42	8.43	12.74	12.69	18.36	18.32
3	35.80	35.36	36.43	35.89	37.00	36.36	8.46	8.57	12.55	12.42	18.30	18.88
4	36.45	36.26	36.87	36.76	37.95	37.17	8.52	8.69	12.95	12.98	18.64	18.89
5	36.53	36.29	37.33	36.92	38.33	37.24	8.65	8.69	13.05	13.17	18.49	19.11
6	37.17	36.96	37.91	37.31	38.82	37.70	8.83	8.95	13.07	13.32	18.85	19.11
7	38.07	38.02	39.30	38.72	39.79	38.86	9.19	9.26	13.61	13.63	19.83	20.02
8	38.26	38.44	39.40	38.81	40.46	39.35	9.18	9.44	13.51	13.49	19.91	20.06
9	38.85	38.90	39.94	39.69	40.76	40.12	9.53	9.60	13.83	13.92	20.50	20.63
10	39.94	39.87	41.59	41.14	42.80	41.66	10.09	10.34	14.15	14.19	21.01	21.43

Table I. (continued).

Group	Girth of Waist		Vertical Side from			Girth of		Waist to	Height of		Height of	
	No	Girdle	Natural	No	Girdle	Upper Leg	Upper Leg	Upper Leg	R	L	R	L
	Girdle	Girdle	Hip	Girdle	Girdle	R	L					
1	23.82	24.06	8.24	8.55	8.30	20.09	20.11	11.41	39.44	39.46	31.92	31.97
2	25.02	24.82	8.19	8.40	8.30	21.58	21.47	11.36	40.14	40.83	32.81	32.72
3	25.08	25.26	7.84	8.66	8.64	21.91	21.76	11.38	39.86	39.84	31.37	32.82
4	25.19	25.45	8.27	8.80	8.66	22.34	22.27	11.70	41.31	41.14	34.14	34.31
5	25.88	25.76	8.17	9.47	9.07	22.49	23.01	12.23	41.06	41.63	34.48	34.39
6	26.40	26.40	8.07	8.99	8.60	22.99	22.82	12.20	41.73	41.96	34.40	34.72
7	26.03	27.28	8.55	9.32	8.89	23.63	23.52	12.09	40.96	40.85	33.18	33.35
8	27.01	27.22	8.46	9.25	8.41	23.94	23.93	12.40	41.53	41.41	33.93	34.11
9	27.93	27.67	8.33	9.55	9.04	24.17	24.10	12.43	42.36	42.43	34.85	34.82
10	29.36	29.50	8.14	9.46	8.75	25.63	25.74	12.45	42.01	42.01	35.69	34.81

Inches

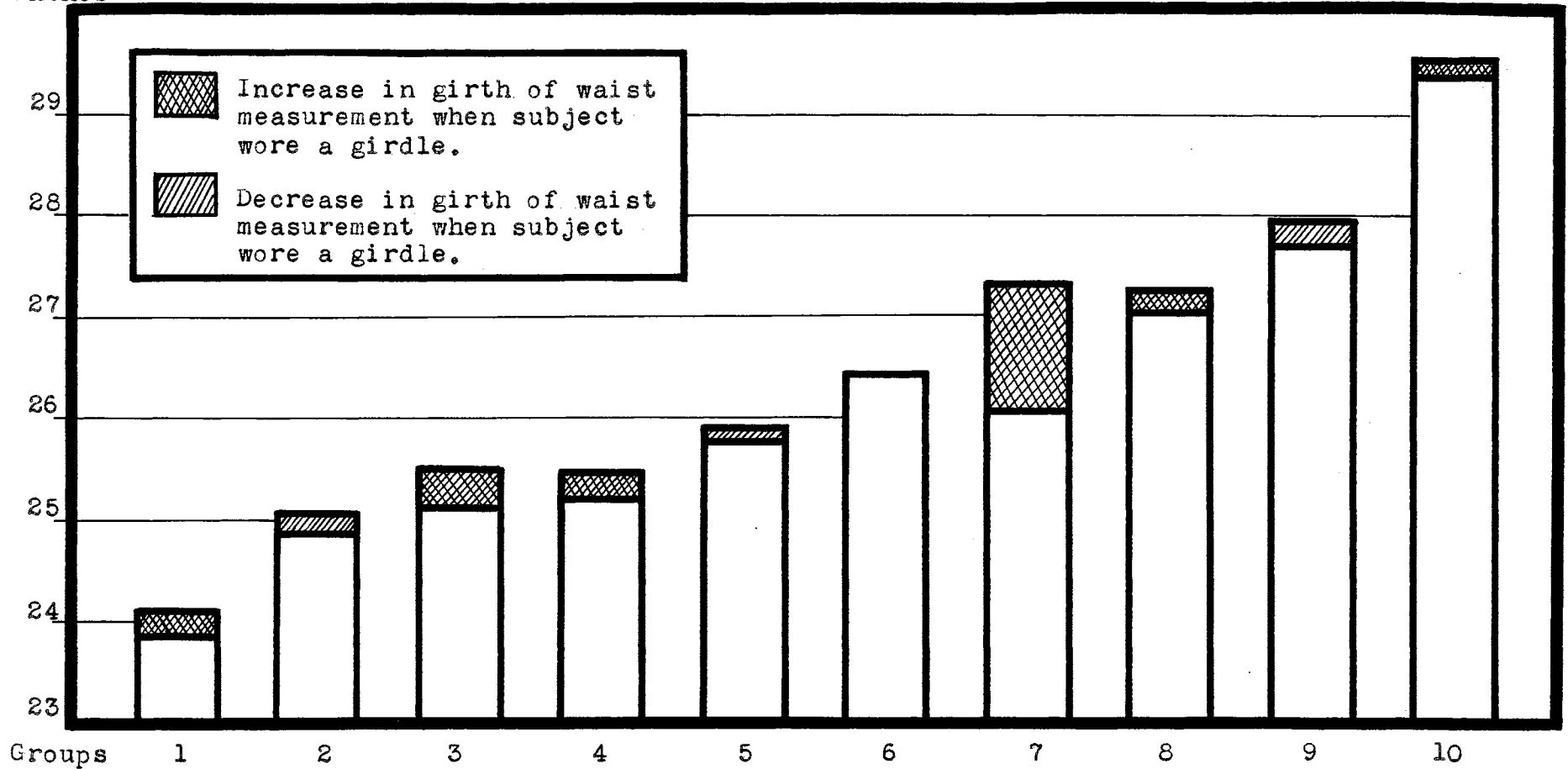


Figure 1. Comparison of waist measurements when the individuals wore girdles and when the individuals did not wear girdles.

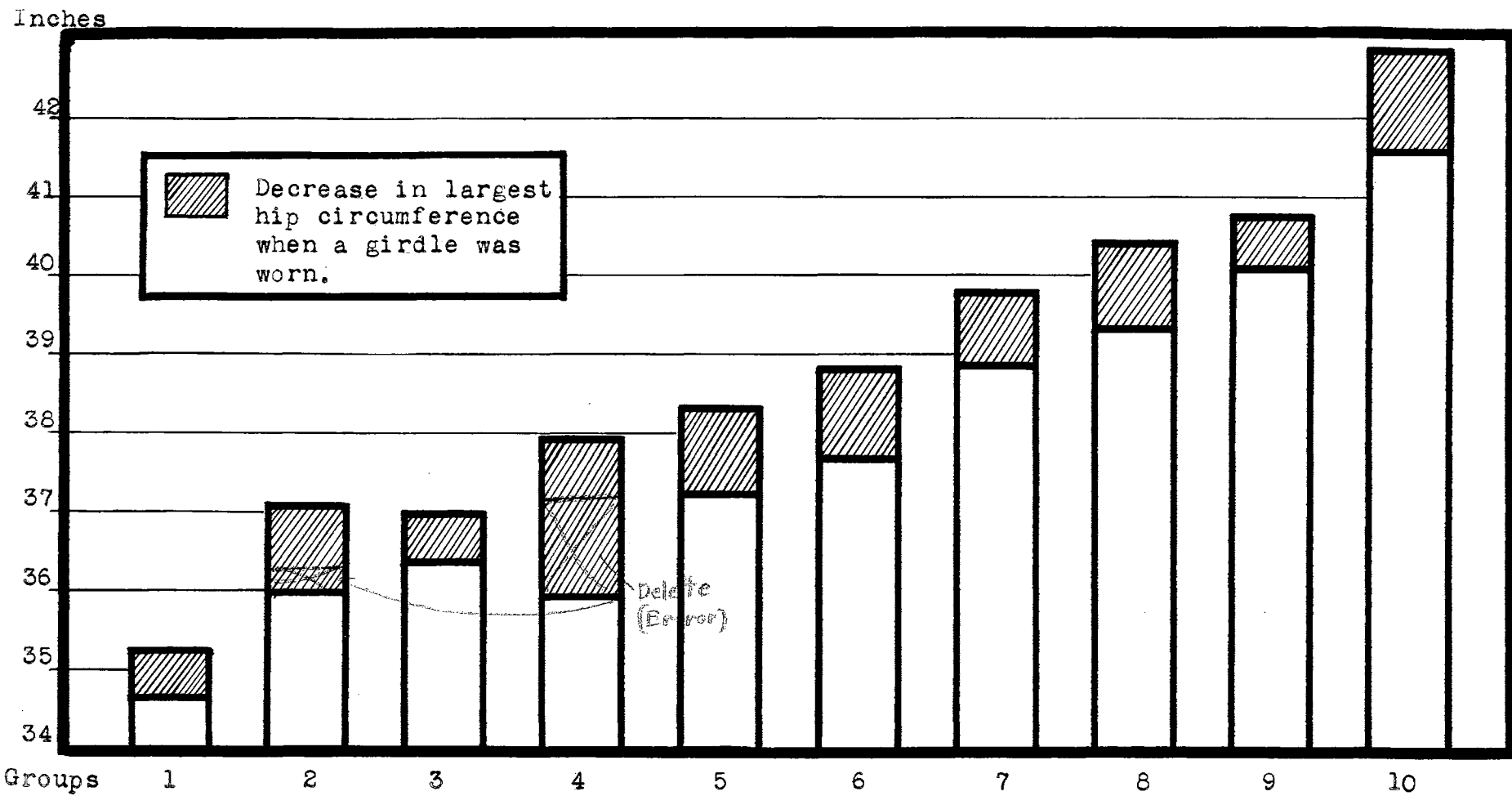


Figure 2. Comparison of largest circumference of hip measurements when the subject was wearing a girdle and when the subject was not wearing a girdle.

A comparison of the three hip circumference measurements was made when the subjects were wearing a girdle and when the subjects were not wearing a girdle. (Figures 3,4.) The relationship of the largest circumference of hip to the trochanter region and to the hip level seven inches below the waist was similar in both cases. When a girdle was worn, the differences in inches in the three measurements were less.

The width of hip measurement taken from the side was in all cases increased slightly when the subject wore a girdle. The amount of increase varied from .01 to .26 inches.

The width of hips taken from the front was increased in six of the groups, and decreased in three. One group was unaffected.

The back arc of hip measurement was increased when a girdle was worn except in the case of the first two groups.

The increase in waist measurement when the individuals were wearing girdles was probably caused by the flesh being pushed up from the hips to the waist. Since it is considered desirable for a foundation garment to exert a force upward¹, this would appear to be a good tendency. Unless the garment was fitted to personal measurements, and that was true in only one or two cases, it would probably be much tighter at the hips than at the waist.

¹ Williams, Personal Hygiene Applied, p. 365.

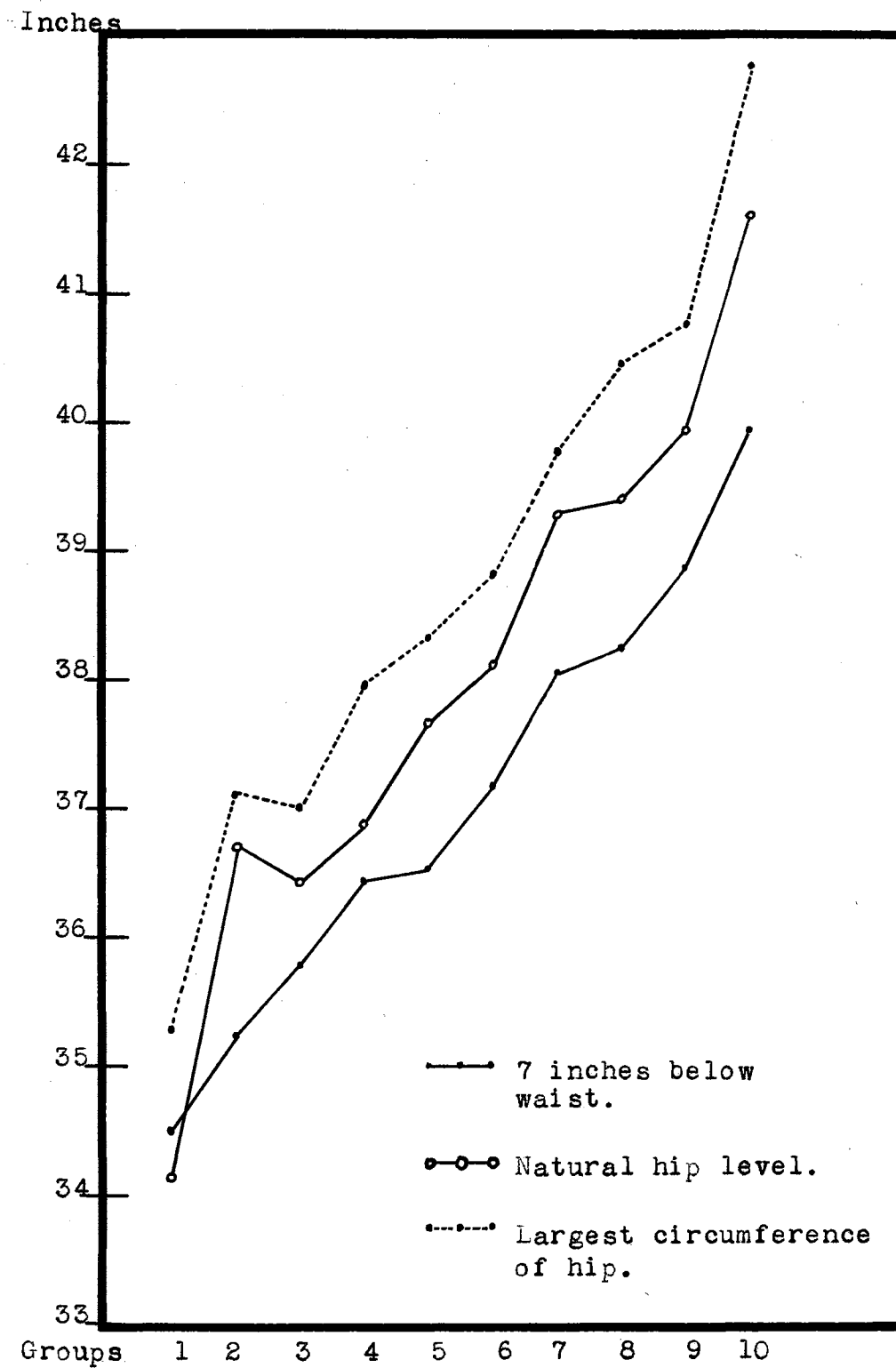


Figure 3. Three hip measurements taken when the subjects were not wearing a girdle.

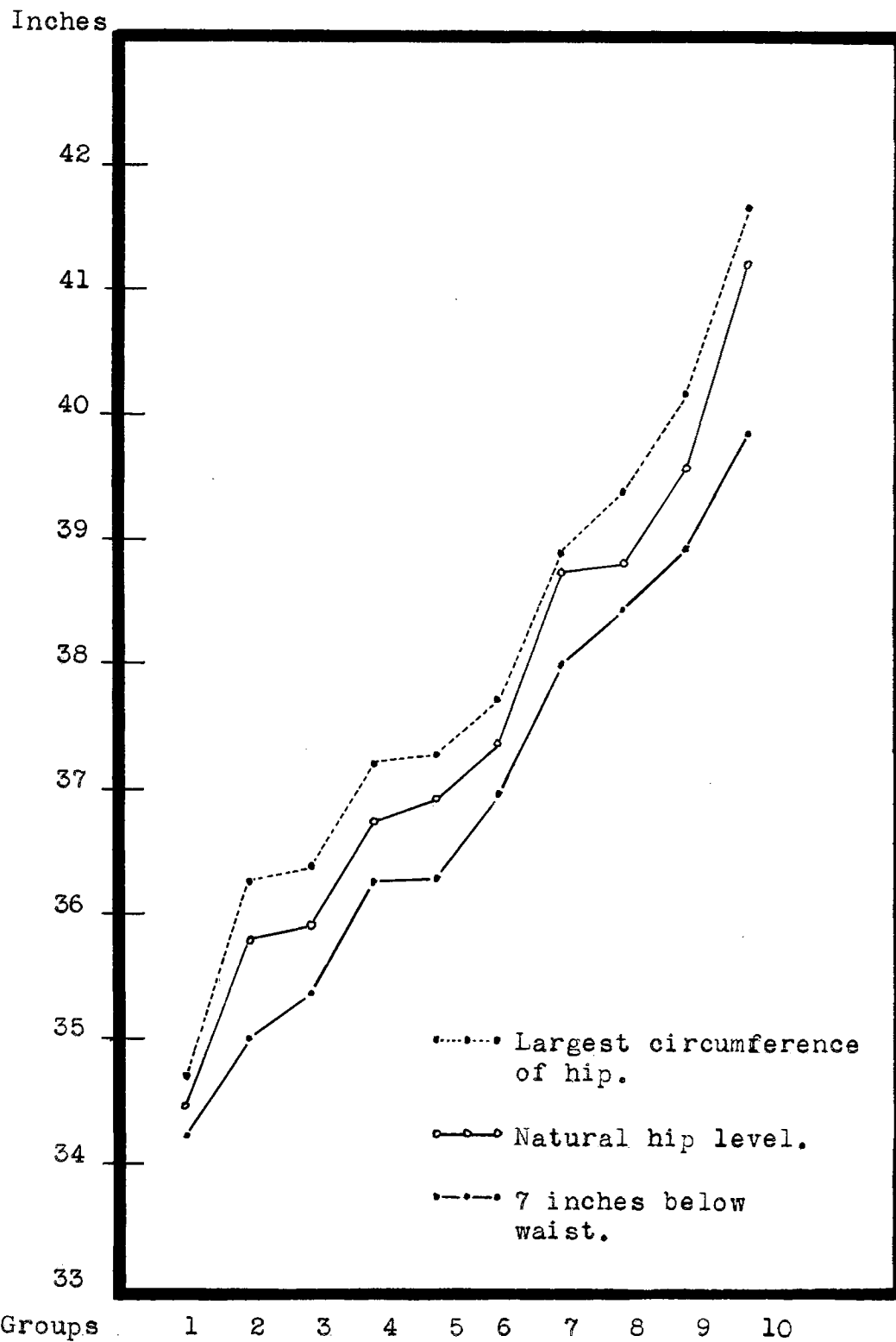


Figure 4. Three hip circumference measurements taken when the subjects were wearing a girdle.

Foundation garment manufacturers use the waist measurement as a standard for sizing corsets and girdles allowing for a nine inch hip development.¹

In all the groups measured the hip development was more than nine inches. (Figure 5.) So, if the garment fit at the hips, it would probably be large in the waist. And, conversely, if it fit at the waist, the garment would probably be too tight at the hips. It is highly undesirable to have a girdle fitted too tightly at either the waist or hips, but it is desirable to have it fitted correctly at both waist and hips. It was found that the foundation garments were often fitted loosely at the waist and as a result the flesh may have tended to be moved up to the waist which would account for the increase in waist measurement when a girdle was worn.

Indications are that the fullest part of the hips is raised through wearing a girdle. A measurement was taken from waist to the level of the largest circumference of the hip when the subject was wearing a girdle and when the subject was not wearing a girdle. In all of the groups the measurement was less when the subject was wearing a foundation garment. This decrease in circumference of the hips may explain why the back arc of hip measurement was increased by a girdle. A measurement was taken at the natural hip which in all groups was higher than the largest hip circumference level. When a girdle was worn, the largest hip

¹Women's Wear Daily, pp. 10, 24.

circumference was raised thus bringing the two hip levels closer together. (Figure 4.)

This same explanation would clarify the increase in width of hip measurement taken from the side since it too was taken at the natural hip level.

Three types of garments were worn by the individuals studied: panty girdles, plain girdles, and one-piece garments. All types were worn with or without supporters for stockings according to the individual's choice. Sixty-six of the women wore panty girdles, 21 wore plain girdles, and 13 wore one-piece garments. Fifty-three of the women used supporters.

Remarks concerning the comfort of the garments were recorded. Only five women expressed great dislike for girdles. Four were uncomfortable when wearing one. Twenty complained of the legs of the garments rolling up or constricting the thighs. In all cases, it was found that the girdles tended to roll down at the waist.

Twenty-two women said they very seldom wore foundation garments, 11 wore them for dressing up only. Twenty-one women wore girdles continuously; about 86% of these women were above the average weight.

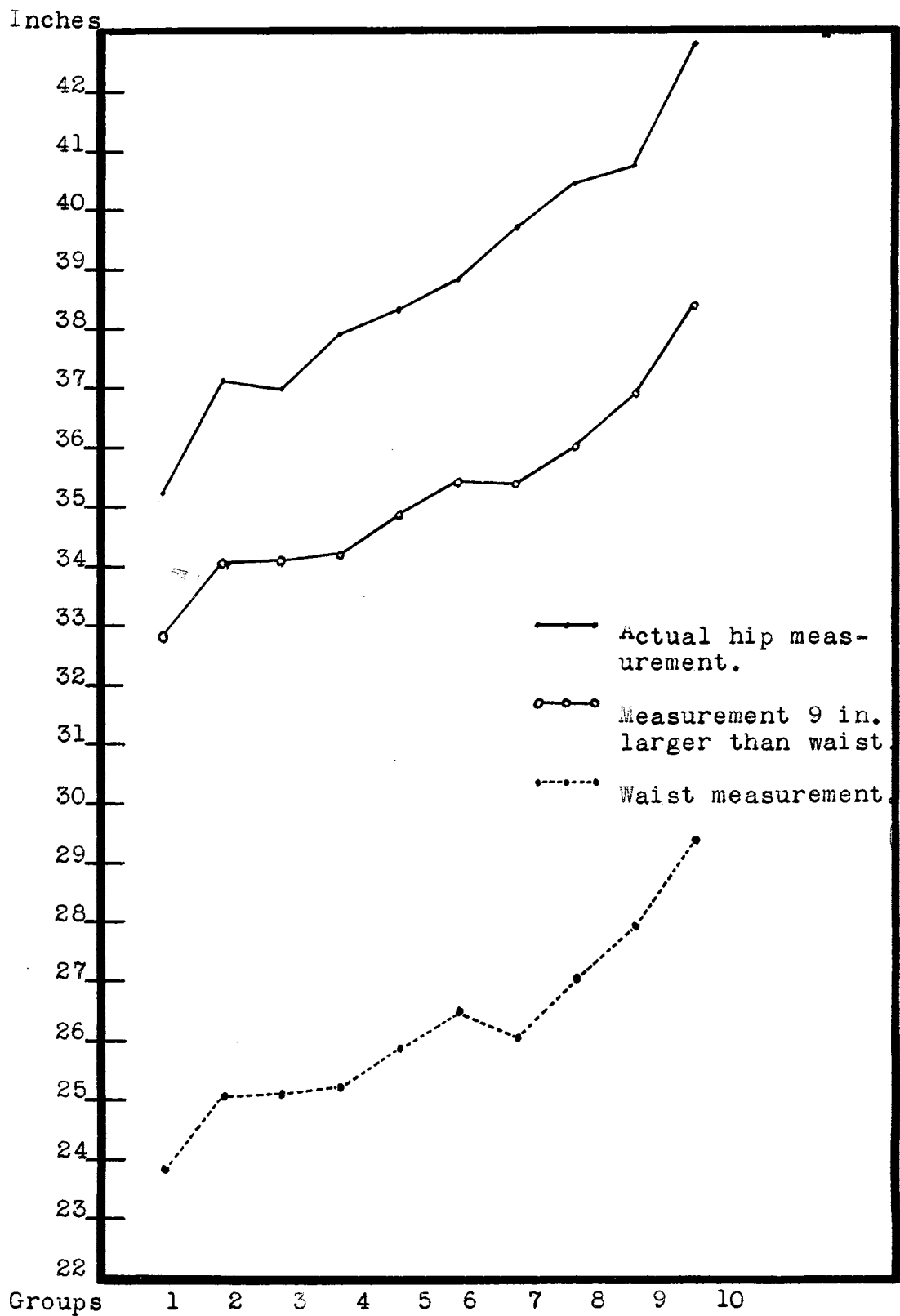


Figure 5. Comparison of "average" hip measurement (9 inches larger than waist measurement) with those actually found in the ten groups measured.

Summary

The material available on the subject indicates that the desirability of wearing a foundation garment depends on support of clothing, proper exercise involving the trunk muscles, and child bearing. A corset may be directly healthful in helping the wearer to maintain good posture by supplementing the function of the muscles that support the abdomen. The amount of satisfaction received by the wearer of a foundation garment is directly related to the correctness of fit of the garment. All garments should be fitted before they are purchased to assure ease of movement in walking, sitting, and bending.

The procedure followed in measuring the 100 college women was adapted from the methods for taking measurements as set up by the Bureau of Home Economics. The 100 women measured were divided into ten groups according to their weight. Nine measurements were taken when subjects were wearing girdles; 16 were taken when subjects were not wearing girdles. The average of all measurements within each group was calculated and was used as the basis of comparison.

The results of these measurements indicated that:

1. The girth of waist measurement was usually increased when a girdle was worn.

2. The three hip measurements (seven inches below the waist, at the trochanter region, and at the largest hip circumference) were decreased when a girdle was worn. The effect was most marked at the largest hip circumference.

3. The level of the largest hip circumference was raised when a girdle was worn.

4. The back arc of hip measurement was increased when a girdle was worn. This was particularly noticeable in the higher weight groups.

5. The width of hip measurement taken from the side was increased when a girdle was worn.

6. The hip development of the college women measured was in nearly all cases larger than the nine inches allowed by foundation garment manufacturers.

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Typist: Dee Laura Victor