

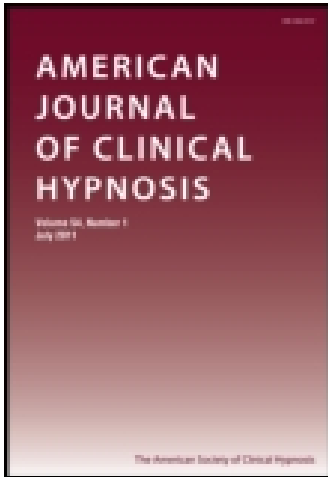
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Hypnotic Stimulation of Breast Growth¹

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An experiment was designed in an attempt to replicate the findings of a previous study which indicated that hypnosis could be used effectively to stimulate breast growth in adult women. Three adult women were given a series of hypnotic treatments in which sensations of breast growth were suggested. It was found that hypnotic stimulation of breast growth did result in larger breasts. A three month follow-up, not included in the previous study, demonstrated that while some decrease had occurred during the three months after the cessation of treatment, 81% of the gains made were retained. The authors agree with Williams (1974) that with further development this procedure could become a desirable alternative to surgical methods of breast augmentation.

Few would disagree that physical appearance plays an important role in all of our lives. As a people, we spend billions of dollars every year on clothing, diet foods, exercise equipment and various other products all geared toward enhancing our physical appearance.

A major component of the female's physical appearance has always been her breasts. The advertising media is filled with various devices to affect the appearance of the breasts in a number of different ways. All of these devices are designed to help the woman more closely approach our society's idea of the perfect breast. As a result of the importance placed on the woman's breasts in our society as a measure of her femininity and sexual attractiveness, many women suffer anxiety over what they consider to be inadequate breast development. Various products, frequently advertised in women's

magazines, offer the woman tremendous gains in breast size in a very short period of time. Unfortunately, these products seldom measure up to the woman's expectations.

The medical profession has approached the problem with a number of methods. The most successful appears to be a surgical method involving the implantation of a bag filled with a silicone solution between the existing breast tissue and the muscle tissue below (Brown, 1968). Unfortunately, this procedure is expensive and involves a stay of several days in a hospital. In addition, this procedure involves the risks intrinsic to any major surgery.

Even though augmentation mammaplasty does have some disadvantages, a recent study (Kolin, Baker and Bartlett, 1976) indicates that surgical augmentation of the breasts does often result in a number of positive effects. A follow-up of breast augmentation surgery patients demonstrated that feelings of increased sexual satisfaction, self-esteem, self-confidence, and a positive body image gained by the surgery were lasting. The authors were careful to point out that the woman's moti-

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² The authors wish to gratefully acknowledge the assistance of Becky Morris and Ellen Sutphin in planning this study.

vation for the surgery was an important factor in determining her level of satisfaction with the surgery. Some women expected the surgery to resolve significant marital problems, which the authors pointed out were problems best dealt with by psychological counseling.

Since breast augmentation does appear to have a positive effect on women who feel that they are inadequately developed, it would seem that research into better and safer ways of stimulating breast development is justifiable. The possibility of stimulating breast growth in adult women using hypnotic suggestion of growth sensations has been recently investigated by James Williams (1974). The results of this study indicated that at the end of 12 weekly sessions using hypnotic suggestion, 13 subjects averaged an increase in the circumference of the breasts of 2.11 inches. No follow-up data was reported to demonstrate whether these gains were retained.

The purpose of this study is to replicate Williams' study adding a three month follow-up to determine if any of the gains made are lasting. If this method does prove to be effective, it would seem a desirable alternative to surgical methods of breast augmentation.

The theoretical underpinning of the hypnotic method as proposed by Williams (1974) lies in the ability of the emotions to affect endocrine metabolism. It has been established that nerve pathways exist between the visceral brain and the hypothalamus which would provide for emotional involvement in endocrine functioning (Reichlin, 1968). For a discussion of the role that the endocrine system plays in the development of secondary sex characteristics see Brasel and Blizzard (1974).

In addition to the physical capability, there are references in the literature that associate changes in emotions with augmentation of secondary sex characteristics in

females (Hitschmann, 1928; Groddeck, 1921; Deutch, 1926; Mohr, 1925; Brazel and Blizzard, 1974). The case reported by Brazel and Blizzard (1974) involved a young woman, age 15 years and 4 months, who came from a disruptive home environment. At the time of the first interview, she showed below average overall size and a total absence of secondary sex characteristic development. She was removed from the adverse environment and after six weeks the breasts were noted to be developing and she had grown in height one inch. By age 16 she had grown about four inches, showed substantial breast development, and a fair growth of pubic hair. By age 16 years and 11 months, she had grown to a height six inches taller than when first seen, showed normal breast development as well as a normal growth of pubic hair.

It has been reported that hypnosis can be used to control blood circulation to various parts of the body (Clawson and Swade, 1975). Given this capability, it may well have been vasocongestion, rather than endocrine metabolism that affected the changes that Williams (1974) noted. If the changes noted were the result of endocrine metabolism changes, one would expect some changes in other secondary sex characteristics as well. This would follow since the hormones that stimulate breast growth also stimulate other changes as well. One of the physiological changes that often occurs with breast growth in adolescence is a pronounced contouring of the body in females. Williams (1974) did note a decrease of five-eighths of an inch on the average of the circumference of the chest below the breasts. This may have indicated that changes in body proportioning were in fact taking place.

To test for the presence of a proportioning effect, in this study measurements of the waist were taken in addition to various measures of the chest. It was thought that if the weight stayed constant and the waist

measurement correlated at a significant negative level to the number of days since the first treatment, that this would be a finding that would support the hormone theory proposed by Williams (1974). However since body proportioning in women varies a great deal from one woman to the next, the absence of a significant effect on waist size will probably not disprove the theory.

In summary, the purpose of this study is to attempt to replicate Williams' (1974) findings, perform a three months follow-up on any treatment gains, and to test for concurrent augmentation of body proportioning.

METHOD

Subjects. The subject population consisted of three adult female volunteers referred to as A, B, and C. The ages of A, B, and C were 27, 26, and 23 respectively. Subject B has borne two children and subjects A and C are nulliparous. Subjects A and C were taking hormones orally in the form of birth control pills. The educational level of the subjects varied. Subject A has completed a bachelors degree, subject B has completed one year of college, and subject C is a high school graduate. All subjects reported that their weight had been constant, within five pounds, for the six months preceding the experiment. The details and procedure used by Williams (1974) were discussed with each subject. Each subject was also familiarized with the hypnotic methods we were using and told that she could withdraw from the study at any point she should decide to.

In addition to these three subjects, two women began the experiment but failed to complete the study. One of the women who left the study did so after only one session as a result of a conversation with a friend who convinced her that the hypnosis might cause her permanent harm. The second subject who left the experiment did so after

four irregularly spaced treatments. Her leaving was the result of acute personal problems.

Apparatus. The apparatus for this experiment consisted of one 150 cm. flexible measuring tape, a Polaroid camera, and a weighing scale.

Procedure. One week prior to the first treatment the following measurements were taken by the experimenter and recorded: (a) the circumference of the chest just above the breasts, (b) the circumference of the chest at the horizontal plane of the nipples, (c) the circumference of the chest just below the breasts, (d) the span of the nipples, and (e) the circumference of the waist. To control for posture, all measurements were taken with the subject standing erect. Lung volume was controlled by taking the measurements with the lungs expired. Before beginning the first treatment, one week later, another complete set of measurements were taken and recorded. These two sets of measurements were averaged and the resulting set of values used as the baseline data. The same measurements were taken and recorded at each subsequent session.

Subjects A and C were given 12 treatments and due to subject B having personal problems at the end of the study she was given 10 treatments. The treatments were given at approximately one week intervals. Each treatment consisted of a measurement session and about 50 minutes of hypnosis. The hypnosis was broken down into three components as described by Williams (1974). The first component consisted of the actual trance induction. The induction method used was a combination of the systematic relaxation method and the arm levitation method, both described by Wolberg (1948).

The second component consisted of asking the subject to imagine herself going back in time to an age somewhere between the ages of ten and twelve years old. As a

result of Williams' (1974) conclusion that actual regression was not important, we simply asked the subject to orient herself at this age and did not attempt to evaluate whether a truly regressed state had been achieved. At this point, the subject's hands were placed on her breasts and suggestions for sensations of growth were given. These suggestions included swelling sensations, tightness of the skin over the breasts, slight tenderness, and the suggestion that she could feel her hands being gently pushed upward as her breasts grew larger. Usually, the subject's hands would be observed to rise a few inches off of the chest during the course of the suggestions.

The third component of the treatment consisted of telling the subject that she was at a point in time two or three years after the completion of the study. It was suggested that she had just finished showering and that she was standing nude in front of the bathroom mirror. She was asked to inspect her appearance noting the larger and more attractive breasts that had resulted from the study.

Before awakening, each subject was given the suggestion that at the next session she would go into a very deep sleep when the experimenter said a certain combination of words to her. This helped to reduce the amount of time required for trance induction in subsequent sessions.

After awakening the subject, another complete set of measurements were taken and recorded. The measurements from before and after each session were plotted and the subjects were allowed to view them at will. In addition to the graphs, photographs were taken periodically during the course of the treatments and the subjects allowed to view them.

One week after the last treatment, another set of measurements was recorded. The measurements taken prior to the last treatment and these measurements one week later were averaged and the resulting

set of values used as the posttreatment data. Approximately three months later, two sets of measurements were made one week apart. These were also averaged and the resulting values used as the follow-up data.

RESULTS AND DISCUSSION

In part of the study reported by Williams (1974), six subjects were divided into two groups of three; one a control group, and one an experimental group. Both groups were hypnotized and had measurements taken at each session. Only the experimental group was given suggestions for breast growth. Williams found that the group that was given the suggestions for breast growth showed some enlargement of the breasts but that the control group showed no change in breast size. This finding coupled with the unlikelihood of finding women willing to volunteer to have their breasts measured weekly for three months and again three months after that led us to choose not to run a concurrent control group. Instead, each subject acted as her own control.

In the planning stages of this study it was recognized that changes in body proportioning, posture, and lung volume could confound the standard breast measurement (the circumference at the plane of the nipples). For example, if the woman lost an inch in the circumference below the breasts, an inch in the circumference above the breasts, while the circumference at the nipples stayed constant, her breasts would indeed have gotten larger in proportion to her body. The standard breast measurement, however, would not have reflected this change. Similarly, if the woman was holding more air in her lungs on one occasion than she had on previous occasions, the circumference at the nipples would show an increase but so would the circumference above and below the breasts resulting in no real increase in breast size.

We were left with the problem of arriving at a breast size index that would measure the difference between the circumference of the base that the breasts rest on (the chest) and the circumference of the breasts measured at the plane of the nipples. We arrived at the following method of measurement. The measurements above the breasts and below the breasts were averaged to determine the base circumference and the resulting value subtracted from the circumference at the nipples. This value was called the breast size index. Thus, an increase of one inch in the breast size index would indicate that the circumference at the breasts had increased one inch in relation to the size of the chest. We believe this to be an adequate indicator of actual breast size.

As can be seen in Table I, all three subjects did show an increase in the breast size index between the pretreatment values and the posttreatment values. The average increase was 5.00 cm. (1.97 in.). The increases ranged from 3.6 cm. (1.42 in.) to 7.2 cm. (2.44 in.). The follow-up indicated an increase of 4.04 cm. (1.59 in.) over the baseline measurements on the average for the three subjects.

sets of measurements if we got significant correlations they would be meaningful.

A number of interesting correlations did, in fact, result. The breast size index correlated to the number of days since the first treatment at .90 ($p < .005$), .90 ($p < .005$), and .84 ($p < .005$) for subjects A, B, and C respectively. This demonstrates that it is highly probable that the increase in breast size noted is related to the course of the treatments. It could be argued that we had merely superimposed our treatments onto the natural cycle in breast size that tends to take place during the menstrual cycle. Since this cycle is not linear when looked at over several cycles, it is unlikely that it could account for the strong correlation coefficients that we encountered.

Correlations of the circumferences above and below the breasts to the circumference at the nipples ranged from $-.19$ to $.13$. These low correlations indicate that the increase in breast size noted was independent of the chest base. If the measured increases in breast size were related to anything but actual enlargement of the breasts, one would expect high correlations between these variables. The only way to increase

TABLE I
MEASUREMENT SUMMARY OF BREAST SIZE INDEX
cm. (in.)

	Subject		
	A	B	C
Baseline	5.4 (2.13)	7.2 (2.83)	9.1 (3.58)
Post Treatment	11.6 (4.57)	12.4 (4.88)	12.7 (5.00)
Net Increase	6.2 (2.44)	5.2 (2.05)	3.6 (1.42)
Follow Up	10.8 (4.25)	11.7 (4.61)	11.2 (4.14)
Increase Retained	5.4 (2.13)	4.5 (1.77)	2.1 (0.83)

Statistical treatment of the data consisted of taking the 13 sets of measurements for subjects A and C and the 10 sets for subject B and computing a correlation matrix for each subject. Even though three subjects is a small sample, we felt that using 10 to 13

the diameter at the nipples outside of an actual enlargement of the breasts would be to expand the lungs or to enlarge the back and chest muscles. This would have increased the measurements above and below the breasts as well resulting in positive cor-

relations between both above and below breast measurements when correlated to the circumference at the nipples. Not only were the correlations very low, but four out of the six were negative. Further, none of the subjects reported having done any exercises that could have accounted for these increases.

We also explored the possibility of the increases being strictly temporary in nature. The excitement phase of the female sexual response cycle involves a swelling of the breasts. This swelling is the result of vasocongestion of the breasts (Masters and Johnson, 1966). Two of the subjects did in fact report arousal on several occasions as a result of the prolonged concentration on breast sensations. Even though the measurements were taken before each session, it would seem possible that the hypnosis could have become a conditioned stimulus for arousal and, likewise, since the measurements directly preceded the hypnosis, the measurement session itself could have become a conditioned stimulus resulting in the response of arousal. This would have taken place gradually which could account for the linearity of the increases. No arousal would have been experienced at first because the measurements would have been a neutral stimulus. As the number of pairings of the measurement session with the consequent arousal grew larger, the measurement session would have gained more strength as a conditioned stimulus presumably eliciting a stronger arousal response and the resulting breast engorgement and swelling.

In an attempt to rule out this variable, measurements were also taken after the hypnotic session and usually the posthypnosis measurement indicated an increase had occurred over the prehypnosis measurement. The pre/post increase varied randomly, showing no tendency to become larger as the treatments progressed. If arousal were responsible for the increases in

breast size noted, one would expect the pre/post difference to decrease as repeated pairings occurred. Since this did not occur, we do not believe this variable to be responsible for the increases in breast size. Further, there is the fact that one subject experienced the same types of results while reporting no arousal at any time during the experiment.

A study by Clawson and Swade (1975) indicates that hypnosis can influence the circulation of blood to different parts of the body. It is possible then that the prolonged suggestions of breast growth sensations could have resulted in vasocongestion not related to sexual arousal. This could also account for the pre/post increase we usually observed. On two occasions we checked breast measurements the day after a session and found the breasts had returned to approximately the prehypnosis size. This would support vasocongestion as the source of the pre/post increase but it still does not account for the gains made over the course of the treatments. Since the measurements were made before the hypnosis, they should be independent of this vasocongestion.

The data and correlations also indicate that a change in body proportioning took place. (See Table II). Two of the subjects' weights were about the same before and after the experiment and the other (subject B) had gained seven pounds. Even though none of the subjects lost weight, their waist measurements decreased by 3.8 cm. (1.59 in.), 1.2 cm. (0.47 in.), and 5.6 cm. (2.20 in.) for A, B, and C respectively. Note that subject B had actually gained weight and yet her waist still decreased by almost one half inch. The correlations of waist size to the number of days since the first treatment for subjects A and C were strong; $-.87$ ($p < .005$) and $-.74$ ($p < .005$). For subject B, who had gained weight, the correlation was only $.14$. It seems likely that it was the weight gain that canceled the shaping effect on subject B thus resulting in a non-

TABLE 2
MEASUREMENT SUMMARY OF WAIST SIZE
cm. (in.)

	Subject		
	A	B	C
Baseline	64.3 (25.3)	69.5 (27.4)	68.9 (27.1)
Post Treatment	60.5 (23.8)	68.3 (26.9)	63.3 (24.9)
Net Decrease	3.8 (1.5)	1.2 (0.5)	5.6 (2.2)
Follow Up	61.9 (24.4)	69.6 (27.4)	66.0 (26.0)
Decrease Retained	2.4 (0.9)	-0.1 (0.0)	2.9 (1.1)

significant correlation. If no shaping effect had occurred, one would have expected her waist to increase as her weight went up. Again, none of the subjects were engaged in any exercise which would have contributed to these decreases. It is also interesting to note that none of the subjects anticipated losing inches in their waist as a result of the experiment. When the graphs began to show the decrease two of the subjects did express a desire for their waists to become smaller.

The follow-up data demonstrated that on the average 81% of the gains in breast size had been retained and that 52% of the decrease in waist size had been retained. It is possible that vasocongestion was partly responsible for the breast growth noted and that the 81% retained reflects the true real growth. On the other hand, it might be that the gains made during the study may continue to deteriorate over time.

It is difficult to explain the increase in waist size from the posttreatment measurement to the follow-up measurement. Part of it is due to the fact that one of the subjects gained weight in the interval. This would not, however, explain the whole difference.

We feel that the results of this study and the study conducted by Williams (1974) justify further research in this area. There are a number of variations that may prove to be more effective. It is possible that longer hypnotic sessions or sessions closer together might prove fruitful. It is also

probable that this procedure could be adopted to be used with groups.

The level of success we attained using this method obviously falls short of what can be done currently with surgical methods. We do feel, however, that our results confirm the findings of Williams (1974) and that with further refinement this procedure could approach the surgical methods' results and possibly surpass them in some respect.

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Excerpt from *Report of the Experiments of Animal Magnetism* by J. C. Colquhoun, Arno Press, New York, 1975:

Arrived at the termination of our labours, before closing this report, your committee have asked themselves, whether, in the precautions which we have multiplied around us, in order to avoid all surprise; whether in the feeling of continual distrust, in which all our proceedings were conducted; whether in the examination of the phenomena observed, we have scrupulously fulfilled our commission. What other course could we have followed? What means more certain could we have adopted? With what distrust more decided and more discreet could we have been actuated? Our conscience, gentlemen, proudly answers, that you could expect nothing from us but what we have done. In short, have we been honest, exact and faithful observers? It is for you who have long been acquainted with us, for you who see us continually near you, whether in the intercourse of the world, or at our frequent meetings, — it is for you to answer this question. Your answer, gentlemen, we expect from the long friendship of some of you, and from the esteem of all.

Indeed, we dare not flatter ourselves with the hope of making you participate entirely in our conviction of the reality of the phenomena which we have observed, and which you have neither seen, nor followed, nor studied along with us. We do not, therefore, demand of you a blind belief of all that we have reported. We conceive that a great proportion of these facts are of a nature so extraordinary, that you cannot accord them such a credence. Perhaps we ourselves might have dared to manifest a similar incredulity, if, in changing characters, you came to announce them here to us, who, like you, at present, had neither seen, nor observed, nor studied, nor followed any thing of the kind.

We only request that you would judge us, as we should judge you, — that is to say, that you be completely convinced, that neither the love of the marvellous, nor the desire of celebrity, nor any views of interest whatever, influenced us during our labours. We were animated by higher motives and more worthy of you — by the love of science, and by an anxiety to justify the expectations you had formed of our zeal, and of our devotion.