

**THE TREATMENT OF CELLULITE USING NATRUM
SULPHURICUM**

A dissertation submitted in partial compliance with the requirements for
the Master's Diploma in Technology in the Department of Homoeopathy
at the Technikon Natal.

by

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Approved for final submission

I, Brigitte Henriette Spitze, do hereby declare that this dissertation
represents my own work, both in conception and execution.




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ABSTRACT

The purpose of this double-blind study was to assess the efficacy of homoeopathic treatment of cellulite in conjunction with massage as opposed to massage alone. Of the patients responding to the advertising done by the Department of Homoeopathy, Technikon Natal, 20 eligible patients were accepted into the study and were randomly assigned to two equal groups. The first group received homoeopathic Natrum sulphuricum 9 CH, twice daily, in conjunction with twice weekly massages. The second group were given placebo pills and also had massages twice weekly.

The participants were assessed four times: initially, after eight massages (one month of treatment), sixteen massages (two months of treatment) and after twenty-four massages (three months). The assessment consisted of: percentage body fat (assessed by measuring skin folds on pre-designated locations using callipers), body mass index (calculated using the height and weight of the participants) as well as girth measurements (taken at the waist, the hips, the buttocks as well as both thighs).

The data was then tabulated and analysed using SGPLUS computer-aided data analysis. Non-parametric tests were used to establish statistical significance. However no statistical differences were found between the two groups or within the groups.

The lack of significant results may be attributed to a number of factors. The Natrum sulphuricum was prescribed irrespective of whether it was the similimum or not. Other variables affecting the cellulite such as diet, exercise, smoking etc. were not controlled. Finally cellulite is a chronic problem, and the treatment may not have been for long enough to produce significant results.

UITTREKSEL

Die doel van hierdie studie was om die doeltreffendheid van homeopatiese behandeling vir selluliet, saam met massering te evalueer in vergelyking met massering alleen. Van die pasiënte wat geantwoord het op advertensies van die Departement van Homoeopatie, Technikon Natal, is 20 geskikte pasiënte vir die studie aanvaar en na willekeur in twee gelyke groepe gedeel. Die eerste groep het homeopatiese Natrum sulphuricum 9 CH ontvang, twee keer daagliks, saam met massering twee keer per week. Die tweede groep het placebo pille ontvang en het ook twee keer per week massering ontvang.

Die pasiënte is vier keer geevalueer: aanvanklik, na agt masserings (een maand van behandeling), na sestien masserings (twee maande van behandeling) en na vierentwintig masserings (drie maande van behandeling). Die evaluasie bestaan uit: persentasie liggaams vet (met vel meetpassers op spesifieke plekke geneem), liggaamsmassa index (bereken met die gewig en die hoogte van die pasiënt) asook omtrek maate (middel, heupe, boude, al twee dye).

Die data is in tabelle geranskik en geanaliseer met SGPLUS rekenaar analise program. Non-parametriese toetse is gebruik om statistiese beduidende verskille aan te dui. Geen statistiese verskille is tussen of binne die twee groepe gevind nie.

Die afwesigheid van betekenisvolle resultate mag wees weens verskillende faktore. Die Natrum sulphuricum is aan pasiënte gegee, of dit die similimum was of nie. Ander faktore wat sellulite beïnvloed, soos dieët, oefening, rook ens. is nie gekontroleer nie. Ten slotte, selluliet is 'n chroniese probleem en die behandeling was moontlik nie lank genoeg nie.

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LIST OF ABBREVIATIONS

BMI - Body mass index

HM - Homoeopathic treatment plus massage

PM - Placebo plus massage

INTRODUCTION

According to Moran (1989) and Kenton (1992), cellulite is a condition that affects mainly women. It is characterised by skin which has an 'orange peel' appearance and is found commonly on the buttocks and upper thighs. Although in the eyes of the medical profession its existence is somewhat controversial, the available literature, as well as the many women affected by cellulite, testify to its existence.

Cellulite is mainly a cosmetic problem. The negative effects of cellulite may lead to psychological problems such as lack of self-esteem and self-confidence. It is also well known that the fear of being fat may be a contributing factor to problems such as anorexia nervosa as well as bulimia (Carson 1988: 261 - 264; Timms 1993). As cellulite consists of fat, amongst other things, the same health risks that are linked to being overweight also apply here. These include vascular disease, kidney problems, lipid disorders, diabetes and others (McArdle *et al* 1991: 658 - 659; Mahan & Arlin 1992: 320 - 322).

It is proposed that Homoeopathic Natrum sulphuricum (a remedy which has cellulite in its pathogenesis) can be used in conjunction with other factors modifying cellulite, such as massage, diet modification and exercise, in order to treat the condition. The negative effects of the cellulite could therefore be counteracted.

Many of the conventional cellulite treatments involve specialised equipment not available to the average person. Therefore regular visits to a beauty professional are necessary, which can be very expensive, as well as time consuming.

Hahnemann, (as quoted in Koehler 1986: 20) the founder of homoeopathy, stated that 'the highest ideal in medicine is the rapid, gentle and lasting restoration of health or the relief and eradication of the disease in its entirety, choosing the shortest, most reliable and least detrimental route, our reasons for the choice being clearly perceptible'. A successful treatment of cellulite in line with Hahnemann's principles is obviously desirable.

The advantage of homoeopathic treatment is that it is non-toxic, highly specific and relatively inexpensive when compared to other cellulite treatments such as liposuction (Jouanny 1991: 22). It can also be combined easily with many of the accepted cellulite treatments.

CHAPTER ONE - THE PROBLEM AND ITS SETTING

1.1. THE STATEMENT OF THE PROBLEM

The purpose of this investigation is to evaluate the efficacy of the treatment of cellulite with Homoeopathic Natrum sulphuricum in conjunction with massage as opposed to massage alone in terms of changes in girth, percentage body fat and body mass index (BMI) in order to ascertain the viability of Homoeopathic treatment of cellulite.

1.2. THE STATEMENT OF THE SUBPROBLEMS

1.2.1. The first subproblem

The first subproblem is to evaluate the efficacy of the treatment of cellulite with Homoeopathic Natrum sulphuricum as well as massage in terms of changes in percentage body fat, girth and body mass index.

1.2.2. The second subproblem

The second subproblem is to evaluate the efficacy of the treatment of cellulite with massage alone in terms of changes in girth, percentage body fat and body mass index.

1.2.3. The third subproblem

The third subproblem is to analyse the obtained data in order to ascertain the viability of Homoeopathic treatment of cellulite.

1.3. THE HYPOTHESES

1.3.1. The first hypothesis

It is hypothesised that the use of Homoeopathic Natrum sulphuricum in conjunction with massage will cause a decrease in girth, percentage body fat as well as body mass index.

1.3.2. The second hypothesis

It is hypothesised that the use of massage alone will cause a decrease in girth, percentage body fat and body mass index.

1.3.3. The third hypothesis

It is hypothesised that the data obtained in this study will demonstrate that the Homoeopathic treatment of cellulite with Natrum sulphuricum in conjunction with massage is more effective than the treatment with massage alone.

1.4. DELIMITATIONS

1. The study will be limited to female subjects with a body mass index between 20 and 30, i.e. not obese.
2. This study will not attempt to explain the mechanism of action of the Homoeopathic Natrum sulphuricum.
3. No patients using any other cellulite treatment will be accepted.
4. No pregnant women will be accepted.

5. No respondents with a daily alcohol intake exceeding two spirit measures or three wine or malt measures will be accepted.
6. No respondents smoking more than 30 cigarettes per day will be accepted.
7. Further delimitations regarding subject admissibility are to be found in chapter 3, 3.2.

1.5. THE ASSUMPTIONS

1. It is assumed that the Homoeopathic Natrum sulphuricum has been prepared in accordance with the principles of Homoeopathy.
2. It is assumed that the patients will take the medicines as prescribed.
3. It is assumed that the patients will comply with the requirements of the study such as regular massages.
4. It is assumed that the patients will not change the lifestyle factors contribution to the formation of cellulite, such as diet, alcohol and cigarette intake, exercise.
5. It is assumed that the information supplied by the patients is accurate.

1.6. DEFINITIONS OF TERMS

Cellulite - A disorder of the physiology of the sub-cutaneous connective tissue characterised by a local fatty excess, an accumulation of fluid and toxins, an insufficiency of the blood and lymph circulation which results in a circulatory stasis.

Obesity - For the purpose of this study, to be defined as a body mass index (BMI) above 30.

Peau d'orange or *orange skin* - A dimpled condition of the skin resembling that of an orange.

CHAPTER TWO - REVIEW OF THE RELATED LITERATURE

2.1. INTRODUCTION

Cellulite is not a recent phenomenon. What is recent is the change in society's perception of cellulite. Whereas in previous centuries cellulite was a mark of beauty, as seen in the paintings by Rubens, Renoir etc., nowadays the absence of cellulite is considered beautiful (Legrand 1985). Recently conducted surveys show that between 80 - 95% of women have cellulite (Legrand 1985; Hardy 1990; Focus on Cellulite 1991).

2.2. CELLULITE VERSUS FAT

The existence of cellulite is a contentious issue as there is no histological difference between cellulite and ordinary fat. However cellulite has a few characteristics which distinguish it from fat:

- the skin overlying cellulitic tissue has a characteristic 'orange peel' or 'peau d'orange' appearance;
- cellulite is found most commonly on the buttocks and thighs, but not on the hands, feet or face;
- cellulite is not found in babies or children, even if they are fat. It is only found after puberty, signifying a hormonal link (Legrand 1985; Hardy 1990);
- advanced cellulite often manifests with local pain, whereas fatty deposits are not painful (Moran 1989);

- it has been found that the skin covering cellulite often is colder than the surrounding skin (Cellulite Today 1991).

2.3. FORMATION OF CELLULITE

In order to explain the formation of cellulite a basic understanding of the structure of the skin and its underlying layer is necessary. The skin consists of two layers: the outer epidermis and the inner dermis. The dermis is highly vascularised, whereas the epidermis is not vascularised and receives nutrients through diffusion from the dermis. The dermis consists of a gel-like matrix embedded with collagen, elastin and reticular fibres. It contains nerve endings, muscle fibres, sweat and sebaceous glands, as well as blood vessels and lymphatic vessels.

Beneath the dermis is the hypodermis or superficial fascia, which consists mainly of connective tissue, especially areolar and adipose tissue. This is the site of the so-called sub-cutaneous adipose tissue. This layer is also highly vascular. (Thibodeau 1987: 114 - 119; Marieb 1989: 135 - 138) According to Atkinson (personal communication 1994), cellulite occurs at the junction of the dermis with the hypodermis .

Professor Curri (cited in Cellulite Today 1991; Kenton 1992) at the Milan Centre for Molecular Biology has found that in cellulitic areas there is:

- dilation of the capillary membranes,
- an increase in the number of collagen fibres and small veins,
- an encapsulation of the adipocytes,
- a biochemical variation of the fatty acids and the triglycerides.

The development of cellulite starts with an impaired local capillary circulation, which is potentiated by lack of exercise, sedentary habits etc. (Ronsard 1973; Ronsard 1992). The capillary walls dilate and plasma leaks out. This causes local fluid retention. Legrand (1985) postulates that the water retention may be linked to hormones, as it is comparable to pre-menstrual syndrome and pregnancy. In pre-menstrual syndrome there is temporary water retention, responsible for symptoms such as weight gain, oedema and breast tenderness. This is caused by fluctuating hormone levels, especially a relative increase in oestrogen (Berkow 1987: 1711). In pregnancy there is an increase in oestrogens, which aggravates the cellulite.

There is an accumulation of toxins, such as uric, lactic and oxalic acids in the areas with impaired local circulation, as the toxins are not being removed (Moran 1989). This causes the local adipocytes to accumulate excess lipids in the form of triglycerides. The connective tissue around the adipocytes becomes sclerosed and nodules are formed. Due to the formation of the nodules, the conversion of triglycerides to free fatty

acids to produce energy is impaired. This potentiates the problem of too much fat in the area. The decrease in blood circulation results in a local reduction of skin temperature. The nodules cause the 'orange skin' appearance of cellulite (Ronsard 1992).

2.4. CAUSES OF CELLULITE

Hormones:

According to Moran (1989),

- 12% of cellulite is formed at puberty. Some researchers consider cellulite to be a secondary sexual characteristic (Legrand 1985; Cellulite Today 1991)
- 19% of cellulite occurs when oral contraceptives are taken. Most of them contain high levels of oestrogen (van Rooyen & Snyman 1994).
- 17% of cellulite is formed during pregnancy, where there is an increase in the levels of oestrogen. Impaired circulation due to the mass of the foetus may also be a contributing factor.
- 27% of cellulite is formed pre-menopausally. This is probably due to a decrease in the progesterone levels, which normally counteracts water retention.

These figures indicate that cellulite is potentiated by high oestrogen levels and low progesterone levels.

Diet:

The incorrect eating habits implicated in causing obesity are also the factors contributing to the formation of cellulite, as the number of adipocytes will increase. These factors include increased dietary fat, refined sugar and excess salt (Legrand 1985; Moran 1989; Hodgkinson 1989; Cellulite Today 1991; Kenton 1992; Winyard 1992; Ronsard 1992). Constituents of a healthy diet such as fibre, fresh fruit and vegetables counteract cellulite production (Lockie 1989: 138). Some fruit and vegetables such as apples and cucumbers also have diuretic properties (Kenton 1992; O'Hagan 1992: 83 - 84).

Moran (1989) and Ronsard (1992), however, caution against sudden weight loss as the weight lost is often quickly regained. Also repeated dieting causes a decrease in the resting metabolic rate (McArdle *et al* 1991: 680 - 682; Mahan & Arlin 1992: 319 - 320). This conserves energy and therefore decreases the likelihood that the triglycerides stored in the adipocytes of the cellulite will be used for energy. The emphasis should therefore be on a change in diet towards healthier eating, rather than a simple reduction in food intake.

Exercise:

Lack of exercise causes a sluggish circulation, thereby contributing to the formation of cellulite (Ronsard 1973; Ronsard 1992). Regular moderate aerobic exercise undertaken three times per week for a minimum of 30 minutes changes the body composition, reducing fat and maintaining or

increasing lean mass (McArdle et al 1991: 685 - 688). The reduction in fat will also occur in the areas affected by cellulite. The blood circulation also improves with exercise thereby aiding the elimination of toxins (Moran 1989; Hodgkinson 1989; Cellulite Today 1991; Kenton 1992).

Toxins:

According to Reckeweg (1986: 43 - 46), these are of two sources: those produced by the body (endogenous) e.g. uric acid, oxalic acid, and those from outside the body (exogenous) e.g. nicotine, alcohol, coffee, pollution, food additives and preservatives. Due to the increase of these factors in today's society the body's detoxifying organs, mainly the liver and the kidneys, have to cope with more and more toxins. Inability to cope with the toxins results in their accumulation in areas of sluggish circulation, such as the buttocks and thighs. Digestive problems such as constipation, as well as liver and kidney disease also result in decreased elimination of toxins (Ronsard 1973; Legrand 1985; Moran 1989; Hodgkinson 1989; Cellulite Today 1991; Kenton 1992; O'Hagan 1992: 83 - 84; Ronsard 1992). Certain drugs such as tranquillisers, sleeping pills and anti-depressants may cause accumulation of toxins in the body, aiding in the development of cellulite (Winyard 1992).

Water:

The normal intake of fluid should be about 2000 ml, which includes the water in the food eaten (Guyton 1986: 266). Most women do not drink sufficient water. Water also aids in the elimination of toxins (Ronsard 1973; Moran 1989).

2.5. STAGES AND SITES OF CELLULITE

There are three stages of cellulite formation:

Stage 1:

The skin looks smooth, but when pinched the 'orange peel' (peau d' orange) appearance occurs. The skin volume is increased and purple striae may form.

Stage 2:

'Orange peel' aspect shows in lateral lighting and when muscles contract. There may be pain on deep palpation. The skin is cold to touch and the striae have become white.

Stage 3:

'Orange peel' is clearly visible. There may be pain without palpation. There is loss of skin suppleness and tonicity. The cellulite is flaccid, soft and has striae and varicosities. (Legrand 1985; Cellulite Today 1991; Kenton 1992)

According to Ronsard (1973), cellulite is found in a number of different sites:

- Inner, upper and back part of thighs
- Inside knees
- Stomach
- Hips
- Buttocks
- Lower back
- Inside and back of upper arms
- Ankles
- Upper back, below the shoulder blades

2.6. ASSESSMENT OF BODY COMPOSITION

The assessment of body composition is very difficult. There are two main methods: direct and indirect. Direct assessment can only be done on cadavers. This is the most accurate form of assessment (Le Bow 1981: 8 - 15; Katch and McArdle 1988: 342).

Indirect assessment consists of a number of different techniques:

Hydrostatic weighing

This consists of immersing the subject in water and is based on the principle that an object's loss of mass in water is equal to the mass of the volume of water displaced. From this the specific gravity and the

percentage body fat can be calculated. This is one of the most accurate measures of percentage body fat, but is based on assumptions such as that the density of the fat-free components such as muscles, bone, teeth remains equal. A disadvantage of this technique is that it requires very specific equipment. (Katch and McArdle 1988: 342; Mahan and Arlin 1992: 308)

Fatfold measurements

This type of assessment is based on the correlation between subcutaneous and total body fat, where it is assumed that 50% of total body fat is found sub-cutaneously. Measures of skinfold thickness are taken at different sites using standard skinfold callipers which exert a constant pressure of 10 g/mm^2 and used in an equation to determine percentage body fat. This technique requires practice to be accurate, but is one of the most accessible means of measuring percentage body fat, especially when combined with other methods of assessment. This technique is also not very accurate when used on very obese patients. (Le Bow 1981: 8 - 15; Williams 1981: 490 - 492; Katch and McArdle 1988: 342; McArdle et al 1991: 616 - 620; Mahan and Arlin 1992: 307 - 308)

Girth measurements

Measurements are taken at different sites and also applied in an equation to assess percentage body fat. They are also useful in the assessment of

changes in particular areas as well as determining fat distribution. (Katch and McArdle 1988: 342; McArdle et al 1991: 620 - 622)

Bioelectric impedance analysis

This is based on the assumption that the flow of electrical current is faster in hydrated fat-free tissue and extracellular water when compared to adipose tissue due to the increased electrolyte concentration. Changes in the state of hydration, i.e. dehydration or overhydration, as well as changes in skin temperature affect the results of this technique and may make it somewhat unreliable. (McArdle et al 1991: 623)

Ultrasound assessment

An ultrasound meter is applied to the skin and high frequency sound waves are emitted. These are reflected back when they impact on the adipose tissue-muscle interface. The time taken for the sound transmission is used to evaluate percentage body fat. This technique is very useful in obese subjects. (McArdle et al 1991: 623)

X-ray assessment

Radiographs done with light soft-tissue films are used to visualise fat layers in specific areas. This method was first used by Stuart in 1940 (as cited in Roche et al 1982: 5). The thickness of these layers is calculated and fatfold equations are used to calculate percentage body fat. This method correlates well with hydrostatic weighing in the determination of body composition. The disadvantage of this technique is that it exposes

the subject to irradiation as well as being expensive. (Roche et al 1982: 5; McArdle et al 1991: 624)

Computerised tomography assessment

CT scanning shows the composition of different cross-sections of the body. These can be analysed to assess percentage body fat. As with radiographs this technique is very expensive and requires specialised services. (McArdle et al 1991: 624)

Body water assessment

This consists of estimating the dilution in the body of radioactive or stable isotopes of water and is based on the assumption that fat free tissue is composed of 73% water. This method has some disadvantages as not all fat free tissue contains the same amount of water, it carries the risk of irradiation and is expensive and difficult. It also gives body composition values that pertain to the entire body, not just selected areas. (Greenwood 1983: 106 - 107)

2.7. TREATMENT OF CELLULITE

Algotherapy:

Algae cataplasms are applied to the area. The client is then wrapped in an asbestos blanket and a heated blanket and exposed to an infra red lamp. This stimulates the blood circulation and allows for the penetration of the active ingredients of the algae. The algae cause re-mineralisation of the tissues as well as slimming and firming (Cellulite Today, 1991). The use of seaweed and spirulina as food supplements is also encouraged (O'Hagan 1992: 83 - 84).

Aromatherapy:

According to Hodgkinson (1989), the aromatherapy oils work by stimulating the elimination of toxic waste. They may be used in conjunction with massage or as an additive to baths, steam baths, vaporisers etc. Commonly used oils include geranium (counteracts fluid retention), rosemary (stimulates the lymphatic system), black pepper, juniper, fennel, cypress, lavender and lemon.

Balneotherapy:

This treatment involves the client lying in a whirlpool bath with algae and sea salts at 37° - 38°C. The jets of aerated water have a massaging effect, thereby increasing the circulation and improving the permeability of the skin. This aids the absorption of the active products of the algae (Cellulite Today 1991).

Body wrapping:

This consists of wrapping the body with tight elastic type bandages that have been soaked in a sea clay solution. The aim is to aid the body with the elimination of toxins as well as firming and cleansing the skin (Strem 1991).

Diet Modification:

A diet low in salt, refined sugar, dietary fat, preservatives, additives, alcohol and coffee reduces the levels of toxins as well the amount of fat to be stored in the adipocytes. Fresh fruit, vegetables and fibre are less fattening and assist digestive activity, preventing constipation. The intake of sufficient water aids elimination and prevents water retention (Moran 1989; Ronsard 1992; Kenton 1992).

Digital puncture:

According to Cellulite Today (1991), this treatment follows the acupuncture meridians, but uses pressure instead of needles. The points stimulated are those of the blood and lymphatic circulations, as well as elimination points for toxins (Stux & Pomeranz 1991: 215).

Exercise:

As seen above, regular, moderate aerobic exercise causes a reduction in body fat and activates a sluggish circulation. Exercise such as swimming, running, walking, rowing and cycling performed at least three times a week is recommended. Localised exercise concentrating only on the areas

affected by cellulite is not effective in reducing the fat in this area (McArdle et al 1991: 671 - 672). Therefore exercise should be performed to reduce the overall body fat.

Faradism:

A pumping effect on both the blood and lymphatic circulation is caused by the contraction and relaxation of the superficial musculature as a faradic current is passed through. This aids the elimination of waste products. The muscle tone of the superficial musculature is also increased, improving the appearance of the covering skin (Hardy 1990).

Galvanism:

This treatment uses the effect of iontophoresis, the penetration of active substances into the tissues, to speed fluid loss and aid the mobilisation of fatty deposits. It also stimulates local blood circulation (Hardy 1990).

Ionithermie:

The Ionithermie machine uses both Galvanism and Faradism. The Galvanism ensures penetration of the active products, whereas the Faradism cause the local musculature to contract. The two therapies used in conjunction achieve greater effects than if used individually (Hardy 1990).

Laser therapy:

The use of helium-neon and infra-red laser causes cells to become active again (cellular bio-energizing effect). It also causes local vasodilation, counteracts oedema, produces analgesia and stimulates topical immunity. The three former effects mainly, can be used effectively to treat cellulite (Redureau 1985).

Liposuction:

This technique has been widely used since 1977 and consists of the surgical removal of cellulite and local fat. There are a number of different methods, such as ultrasound (Sillam 1992), syringe liposculpture and suction lipectomy amongst others. This obviously needs to be performed by a competent practitioner and is not without risks. Lower body lifts after liposuction also improves the cosmetic appearance of areas affected by cellulite (Lockwood 1993).

Multi jet shower:

This therapy detoxicates and tones the tissues by giving a deep vertical massage with a series of three successive jets of water (Cellulite Today 1991).

Products:

Many of the Beauty houses have developed specialised products to treat cellulite. Most contain plant extracts and are used to increase peripheral

blood circulation. They are often used in conjunction with massage or massaging gloves (Hardy 1990).

Skin brushing:

This technique is based on the principle that the skin is also an eliminatory organ. It works on cellulite by breaking down the cellutic nodules, causing the release of toxins. It is also said to stimulate the other eliminatory organs such as the intestine, kidneys and lung. It consists of brushing the entire body with a dry hard brush, always in the direction of the heart (Hodgkinson 1989; O'Hagan 1992: 83 - 84; Soltanoff 1988).

Under water drainage:

This therapy involves hydromassage which is carried out in salt water containing salt and algae at 37°. The strength of the water jet depends on the stage of the cellulite (Cellulite Today 1991).

2.8. MASSAGE IN THE TREATMENT OF CELLULITE

Massage is one of the most commonly used techniques in the treatment of cellulite. It can be performed in many different ways, including the use of a skin brush, a loofah or a massage glove. Aromatherapy oils or products specifically designed to counteract cellulite are often combined with massage.

Massage acts on the human body in a number of different ways. The two main benefits are reflex effects which cause relaxation of muscles and dilation or constriction of arterioles, as well as mechanical effects such as assisted blood and lymphatic return as well as the dissolution of adhesions. Deep effleurage or stroking is a massage technique which assists in the removal of oedematous fluid as well as increasing blood and lymphatic return (which in turn facilitates the elimination of wastes). This should always should always be centripetal, i.e. towards the cerebral cortex. Pétrissage or kneading mobilises local tissue fluid and increases local circulation through the release of acetylcholine and histamine. (Wakim 1985: 256 - 261; Knapp 1990: 433 - 435; Thompson et al 1991: 443 -443)

Massage has been found to increase urine output which would signify an increase in the excretion of wastes (Basmajian and Nyberg 1993: 210). According to Pardini and Zaiette (cited in Wakim 1985: 256 - 261) massage also activates lipolysis due to the release of catecholamines.

As massage causes an increase in local circulation (blood and lymphatic fluid), aids in the breakdown of adhesions (the nodules formed in cellulite), increases urine output and stimulates lipolysis, it is well indicated in the treatment of cellulite (Ronsard 1973; Hodgkinson 1989; Moran 1989; Kenton 1992).

2.9. HOMOEOPATHIC TREATMENT OF CELLULITE

Homoeopathy uses the Law of Similimum in its mode of treatment. This means that a medicinal substance, which can produce a certain change in the body (its pathogenesis), will be used to treat the condition where such a change occurs. In this case, a substance capable of producing cellulite in a normal, healthy body, will be used to treat cellulite. The one remedy that has cellulite in its pathogenesis is *Natrum sulphuricum*.

Jouanny (1984: 275 - 278) states that 'the sensitive type of patient is usually corpulent and adipose with tissues which are infiltrated with cellulite. This hydrolipoplexia can be found all over the body, but most particularly on the abdomen, the buttocks and the thighs'.

The *Natrum sulphuricum* patient has such a high level of toxins that the centrifugal force has stopped working. This corresponds to the sycotic reactional mode, which is characterised by tissues imbibed with water, resulting in oedema and/or cellulite. *Natrum sulphuricum* is one of the main remedies for the sycotic reactional mode. The body is no longer capable of eliminating these toxins and more toxins accumulate. There is an increase in interstitial liquids which leads to cellulite and oedema. The *Natrum sulphuricum* patient usually has a good bone structure and well developed muscles but the oedema and cellulite usually hides this (Boyer 1993).

Homoeopathy works on the whole person, strengthening the vital force, thereby allowing the body to counteract the disease. In the case of cellulite, it is proposed that homoeopathy strengthens the vital force and therefore enables the body to eliminate the toxins and excess fluid (Vithoulkas 1986: 58 - 85).

Another law used in homoeopathic treatment is that of the infinitesimal dose. Hahnemann found that the medicinal substances used in homoeopathy work better in very small doses. These are termed potencies.

Low potencies (5 CH) are used for local symptoms, such as a bee sting; medium potencies (7 or 9 CH) are used for general symptoms, functional disturbances and high (15 or 30 CH) are used when nervous or behavioural symptoms are evident (Jouanny 1991: 91 - 99). As cellulite is a functional complaint and not merely local, the potency to be used is 9 CH.

CHAPTER THREE - MATERIALS AND METHODS

3.1. THE DATA

The data of this research is of two sources: primary data and secondary data.

3.1.1. The primary data

The primary data used in this study was:

1. The data obtained from the girth measurements.
2. The data obtained from the skin fold measurements which was used to calculate the percentage body fat.
3. The data obtained from the height and weight of the patients which was used to calculate the body mass index.

3.1.2 The secondary data

Information on the measurement of girth, the use of callipers to establish percentage body fat and body mass index tables was needed. This information was taken from Munro and Edwards (1990: 49, 356), McArdle *et al* (1991: 616 - 624), Mahan and Arlin (1992: 305 - 311) and Johnson (personal communication 1994).

3.2. THE CRITERIA GOVERNING THE ADMISSIBILITY OF DATA

Only the data from patients attending regular massages was accepted.

Only the data obtained from the case histories and measurements taken by the researcher was used.

3.3. THE RESEARCH METHODOLOGY

Respondents to advertising undertaken by the Department of Homoeopathy were interviewed, were evaluated in terms of the delimitations and the research was explained to them. Those who consented to participating in the research and were able to attend regular massages as well as follow-ups had their case histories taken, a copy of which may be viewed in Appendix A, a physical examination was conducted and the various measurements were obtained.

The type of measurements (girth, skin fold, height and weight) that were taken, were chosen for their specificity to the areas affected by cellulite as well as for their accuracy and availability. These were taken four times: at the beginning of the study, after eight massages (i.e. after the first month), after sixteen massages (i.e. after the second month) and after twenty-four massages (i.e. at the end of the study).

The measurements were be obtained in the following way:

1. Girth

A standard dressmakers measuring tape made of plastic was used to measure girth. Care was taken not to cause compression of the skin surface, as this would artificially decrease girth. Five sites were used, always on the dominant side, i.e. left or right (Johnson personal communication 1994):

- the waist (level of minimum circumference)
- the hips (at the level of the iliac crest)
- the buttocks (point of maximum protrusion)
- the right thigh (level of maximum circumference)
- the left thigh (level of maximum circumference)

In each case two measurements were taken and the average was used for analysis.

2. Percentage body fat

Skin fold measurements were taken using standard millimetre Lange skinfold callipers, recommended by Williams (1981: 490 - 492) and Le Bow (1981: 8 - 15).

The sites where skin fold measurements were taken are:

- the triceps (a vertical fold in the midline of the upper arm, halfway between the tip of the shoulder and the tip of the elbow)
- below the scapula (oblique fold, measured just below the bottom tip of the scapula)

- above the iliac crest (slightly oblique fold, just above the iliac crest, following the natural diagonal line at this point)
- on the abdomen (vertical fold, 5 cm to the right of the umbilicus)
- on the upper thigh (vertical fold at the midline of the thigh, two-thirds of the distance from the upper edge of the patella to the hip)
- on the calf (vertical fold at the point of greatest circumference of the calf).

Three measurements were taken at each site and the mean calculated.

This was then used in the following formula {sum of fat folds multiplied by 0.1584} + 3.58 used to calculate the percentage body fat (McArdle *et al.* 1991: 616 - 624; Mahan and Arlin 1992: 305 - 311; Johnson, personal communication 1994).

3. Body mass index

The height and the weight of the patient were measured and the body mass index calculated according to the following formula: the weight in kilograms divided by the square of the height in meters (kg/m^2) (Mahan and Arlin 1992: 616 - 624; McArdle *et al.* 1991: 305 - 311). The weight was measured on a Soehnle electronic scale. The height was measured using a standardised wall-chart from Medi-Quick pharmacy and medicine depot, Durban.

The sample of patients was randomly divided into two equal groups by a qualified pharmacist at the Department of Homoeopathy, Technikon Natal. This ensured that the randomisation as well as the double blind.

One of these groups (HM) was treated with Natrum sulphuricum 9 CH, five pills twice daily, and massage twice a week for three months. The other group (PM) received placebo medication twice daily and massage twice a week for three months.

The medication (Natrum sulphuricum 9 CH, prepared according to homoeopathic principles and triple impregnated onto lactose pills) as well as the placebo pills (unmedicated lactose pills) were bought from Homoeopharm Laboratories, Doornfontein, Johannesburg. They were dispensed by a qualified pharmacist at the Department of Homoeopathy, Technikon Natal.

The massages were conducted, under qualified supervision, by the third year students of the Department of Somatology. Only non-aromatic oils were used.

The data was analysed using SGPLUS computer-aided analysis (Statgraphics Plus Version 6.0). Seven different sets of values were used: percentage body fat, body mass index, waist girth, hip girth, buttocks girth, left leg girth and right leg girth. Non-parametric tests were used due to the limited number of participants in the study and since the underlying distribution may not have been normal. Comparison within groups was done using the Wilcoxon Signed Rank test for non-paired data. In order to assess the statistical differences between groups the Mann-Whitney U-test was used.

In total 29 subjects were accepted for the research. Of these 8 dropped out due to various reasons such as transport problems, difficulties attending massages as well as time constraints. One other subject was excluded due to excessive weight gain and loss due to dietary change.

3.4. THE SPECIFIC TREATMENT OF EACH SUBPROBLEM

3.4.1. THE FIRST SUBPROBLEM

Evaluation of the efficacy of the treatment of cellulite with Homoeopathic Natrum sulphuricum as well as massage in terms of changes in percentage body fat, girth and body mass index.

3.4.1.1. The data needed

The necessary data was obtained from measurements. The case histories and physical examinations of the patients also yielded data.

3.4.1.2. The location of the data

Only the information obtained from the measurements made and the case histories taken was used.

3.4.1.3. The means of obtaining the data

The data will be obtained as described in research methodology.

3.4.1.4. The treatment of the data

The data was analysed as described in research methodology above.

3.4.2. THE SECOND SUBPROBLEM

Evaluation of the efficacy of the treatment of cellulite with massage alone in terms of changes in girth, percentage body fat and body mass index.

3.4.2.1. The data needed

The data needed is the same as for subproblem one.

3.4.2.2. The location of the data

As for subproblem one.

3.4.2.3. The means of obtaining the data

The means of obtaining the data is the same as for subproblem one.

3.4.2.4. The treatment of the data

As for subproblem one.

3.4.3 THE THIRD SUBPROBLEM

Analysis of the obtained data in order to ascertain the viability of Homoeopathic treatment of cellulite.

3.4.3.1. The data needed

The data needed is that obtained for subproblems one and two.

3.4.3.2. The location of the data

As for subproblem one.

3.4.3.3. The means of obtaining the data

The data will be obtained as described in research methodology.

3.4.3.4. The analysis of the data

The data was analysed as described in the research methodology.

CHAPTER FOUR - RESULTS

The Wilcoxon Signed Rank test was used to analyse the results within groups, whereas the Mann-Whitney U-test was used for the analysis of results between groups.

CHANGES IN PERCENTAGE BODY FAT

When comparing the changes in percentage body fat between the first and the last visit for both the Homoeopathic treatment and massage group (HM) and the placebo treatment and massage group (PM), no statistical significance was found. The values were $z = 0.475$ (HM) and $z = 0.759$ (PM), respectively, where z values below 0.05 were considered significant.

There was also no significant statistical change between the HM and PM groups on visit one ($z = 0.791$) as well as on visit four ($z = 0.791$).

Table 4.1.: CHANGES IN PERCENTAGE BODY FAT:

HOMOEOPATHIC TREATMENT AND MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
1	27.76	32.30	34.50	30.20
11	16.60	17.42	17.30	19.10
13	19.60	19.40	23.50	22.10
15	27.30	27.20	31.60	33.80
18	24.40	26.60	26.60	24.60
20	26.80	27.50	29.20	28.70
21	30.19	31.67	29.47	31.03
24	29.10	26.75	26.54	24.43
25	26.64	25.37	25.86	23.69
27	26.51	24.32	25.48	24.56
Median	26.72	26.675	26.57	24.58

Table 4.2.: CHANGES IN PERCENTAGE BODY FAT: PLACEBO

PILLS AND MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
3	23.50	26.90	28.98	27.86
8	23.10	19.30	18.20	21.10
9	20.40	25.30	22.90	23.70
12	29.00	29.90	34.90	30.50
14	25.00	23.50	25.22	22.50
19	27.64	26.10	27.54	28.22
22	29.00	28.53	24.20	26.40
23	22.07	24.06	22.47	20.19
28	32.56	29.39	32.13	29.36
29	23.17	25.96	27.18	26.91
Median	24.25	26.03	26.2	26.655

CHANGES IN BODY MASS INDEX

When comparing the homoeopathic treatment and massage group values for body mass index on visits one and four, no statistical significance was found ($z = 0.108$). The same applies to the placebo and massage group ($z = 0.918$).

The z level for the comparison between groups on visit one was: 0.623 and on visit four was: 0.969. There was therefore no significant change.

Table: 4.3.: CHANGES IN BODY MASS INDEX: HOMOEOPATHIC TREATMENT AND MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
1	29.80	31.40	29.80	29.80
11	20.40	20.90	21.10	21.20
13	22.50	23.40	23.20	22.50
15	27.70	28.30	28.30	28.50
18	24.70	24.70	24.30	23.60
20	28.60	28.20	28.60	28.60
21	26.70	25.60	25.40	25.60
24	24.40	23.40	23.90	23.40
25	23.40	21.90	21.90	22.70
27	23.40	23.20	21.50	21.50
Median	24.55	24.1	23.5	24.05

Table 4.4.: CHANGES IN BODY MASS INDEX: PLACEBO PILLS
AND MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
3	25.20	26.00	25.80	25.25
8	22.40	22.10	21.80	22.00
9	22.00	22.10	21.80	21.90
12	29.00	29.00	29.50	30.10
14	20.20	21.20	21.20	21.10
19	26.90	25.85	27.00	26.50
22	23.80	23.10	23.20	23.20
23	24.08	23.90	23.71	23.65
28	29.21	29.67	30.35	30.35
29	22.99	23.45	22.84	22.84
Median	23.94	23.675	23.455	23.425

CHANGES IN WAIST GIRTH

When comparing the different values in waist girth between visit one and visit four of the homoeopathic treatment and massage group, no statistical significance was found ($z = 0.414$). The same applies to the placebo and massage group ($z = 0.726$).

When the results of visit one in both groups were compared, the z value was 1, i.e. not significant. When comparing visit four between both groups, the z value was 0.969, i.e. not significant.

Table 4.5.: CHANGES IN WAIST GIRTH: HOMOEOPATHIC
TREATMENT AND MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
1	88.50	87.50	87.00	84.75
11	67.75	68.50	71.50	68.50
13	69.50	67.50	68.50	67.50
15	78.25	77.50	76.50	78.50
18	70.25	72.50	74.00	73.50
20	83.00	84.00	85.50	85.50
21	83.50	86.00	85.00	83.00
24	74.00	75.00	74.25	73.50
25	74.25	74.50	72.00	71.25
27	65.50	63.00	64.00	62.50
Median	74.125	74.75	74.125	73.5

Table 4.6.: CHANGES IN WAIST GIRTH: PLACEBO PILLS AND
MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
3	73.00	73.00	75.00	73.00
8	65.50	67.00	65.75	65.50
9	71.00	71.75	69.50	70.00
12	91.50	92.00	93.50	92.00
14	69.50	68.75	68.50	68.75
19	81.25	81.00	85.50	81.50
22	71.50	69.75	71.00	69.75
23	70.50	72.00	72.00	72.50
28	88.50	84.00	85.50	83.50
29	74.00	77.00	76.50	76.00
Median	72.25	72.5	73.5	72.75

CHANGES IN HIP GIRTH

When comparing the changes in hip girth between the first and the last visit for both the Homoeopathic treatment and massage group (HM) and the placebo treatment and massage group (PM), no statistical significance was found. The values were $z = 0.507$ (HM) and $z = 0.477$ (PM), respectively, where z values below 0.05 were considered significant. There was also no significant statistical change between the HM and PM groups on visit one ($z = 1$) as well as on visit four ($z = 0.733$).

Table 4.7.: CHANGES IN HIP GIRTH: HOMOEOPATHIC TREATMENT AND MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
1	101.50	105.00	103.00	100.00
11	93.50	93.00	91.50	90.50
13	85.75	85.50	86.50	87.50
15	97.00	97.50	95.50	93.50
18	86.50	87.50	86.00	84.50
20	101.50	107.00	105.00	102.00
21	97.75	98.00	98.50	97.50
24	96.00	98.50	97.00	98.50
25	95.50	92.50	95.00	97.50
27	74.50	75.00	72.50	73.00
Median	95.75	95.25	95.25	95.5

Table 4.8.: CHANGES IN HIP GIRTH: PLACEBO PILLS AND
MESSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
3	96.00	96.00	97.50	95.00
8	84.50	82.50	88.50	86.00
9	90.25	91.00	91.50	87.50
12	93.00	101.00	94.00	97.00
14	88.50	87.50	88.50	87.00
19	107.00	109.50	107.50	110.00
22	94.50	96.75	94.00	91.25
23	93.50	94.50	92.50	93.50
28	101.50	100.50	99.50	102.50
29	100.50	103.50	102.00	104.00
Median	94	96.375	94	94.25

CHANGES IN BUTTOCKS GIRTH

When comparing the changes in buttock girth in the homoeopathic treatment plus massage group between visit one and visit four, no statistically significant change was noted ($z = 0.241$). The same applies to the placebo plus massage group ($z = 0.441$).

Comparisons between the first and last visits in both groups also showed no statistical significance. The z values were 0.705 and 0.879 respectively.

Table 4.9.: CHANGES IN BUTTOCKS GIRTH: HOMOEOPATHIC
TREATMENT AND MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
1	108.00	110.00	112.75	111.50
11	98.50	98.00	99.50	100.50
13	93.75	93.75	95.50	94.50
15	109.50	111.00	112.00	106.00
18	100.50	102.50	103.51	102.00
20	111.50	113.00	114.50	113.50
21	103.50	105.75	103.50	104.50
24	99.50	98.50	98.50	98.00
25	105.50	106.00	104.50	106.00
27	108.00	108.50	108.00	107.50
Median	104.5	105.875	104.0051	105.25

Table 4.10: CHANGES IN BUTTOCKS GIRTH: PLACEBO PILLS AND
MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
3	99.00	99.00	101.50	100.50
8	96.75	98.50	98.50	101.50
9	98.25	100.50	98.50	99.50
12	106.50	108.00	107.50	108.50
14	98.00	93.50	95.75	95.50
19	120.50	118.50	112.50	121.00
22	103.75	99.25	101.50	98.00
23	101.50	102.50	102.50	101.50
28	105.00	108.50	107.00	110.50
29	111.50	109.00	109.50	111.50
Median	102.625	101.5	102	101.5

CHANGES IN LEFT LEG GIRTH.

There was no statistical change in left leg girth between visits one and four in either groups. The z values were as follows: homoeopathic treatment and massage 0.441 and placebo and massage 0.139.

No statistical change was found between groups either, where the z values were: visit one 0.761 and visit four 0.939.

Table 4.11: CHANGES IN LEFT LEG GIRTH: HOMOEOPATHIC TREATMENT AND MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
1	62.50	64.00	63.50	64.00
11	57.75	57.50	57.50	58.00
13	59.50	58.75	60.50	59.25
15	64.00	64.50	66.00	68.00
18	59.50	61.50	61.00	61.00
20	62.50	63.00	64.50	64.00
21	58.50	60.00	58.50	58.00
24	58.50	58.50	58.00	58.50
25	62.50	61.00	60.50	60.50
27	64.50	63.50	62.50	63.50
Median	61	61.25	60.75	60.75

Table 4.12.: CHANGES IN LEFT LEG GIRTH: PLACEBO PILLS AND
MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
3	61.00	61.50	60.50	63.00
8	57.50	57.50	58.00	59.00
9	58.00	57.00	56.50	57.50
12	59.50	62.00	61.50	62.75
14	58.00	57.00	58.00	57.50
19	66.00	67.50	68.00	66.75
22	57.50	57.00	60.00	57.75
23	60.25	63.00	62.00	63.50
28	66.50	66.00	64.50	64.50
29	64.50	66.00	65.00	65.00
Median	59.875	61.75	61	62.875

CHANGES IN RIGHT LEG GIRTH

When comparing the homoeopathic treatment and massage group values for right leg girth on visits one and four, no statistical significance was found ($z = 0.236$). The same applies to the placebo and massage group ($z = 0.138$).

The z level for the comparison between groups on visit one was: 0.879 and on visit four was: 0.969. There was therefore no significant change.

Table 4.13.: CHANGES IN RIGHT LEG GIRTH: HOMOEOPATHIC
TREATMENT AND MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
1	63.00	63.50	63.50	64.00
11	58.50	58.75	61.50	60.00
13	59.75	59.75	59.50	59.00
15	62.00	64.75	66.75	67.00
18	59.00	61.50	61.00	60.00
20	62.50	63.00	64.50	64.00
21	59.50	60.00	59.00	58.50
24	57.75	57.00	58.00	57.50
25	62.75	62.50	60.50	61.50
27	63.00	64.00	63.00	63.00
Median	60.875	62	61.25	60.75

Table 4.14.: CHANGES IN RIGHT LEG GIRTH: PLACEBO PILLS AND
MASSAGE

Patient No.	Visit 1	Visit 2	Visit 3	Visit 4
3	62.00	62.50	62.00	62.75
8	57.50	57.50	57.50	58.50
9	57.00	59.00	58.50	59.00
12	60.00	60.50	62.50	63.50
14	57.50	56.50	58.75	56.50
19	67.25	68.50	68.00	67.75
22	58.75	57.00	57.50	56.75
23	60.00	62.25	62.00	63.50
28	64.00	64.50	64.00	64.00
29	64.00	65.00	65.00	65.00
Median	60	61.375	62	63.125

CHAPTER FIVE - DISCUSSION AND RECOMMENDATIONS

This study was concerned with the treatment of cellulite in one of two ways: with homoeopathic treatment (Natrum sulphuricum 9 CH) and massage versus placebo pills and massage. In order to assess changes, three different sets of measurements were used: body mass index, girth and percentage body fat.

Factors affecting the production of cellulite

Hormonal changes

- In three of the patients the cellulite formed during puberty (15%).
- In two patients it coincided with taking the contraceptive pill (10%).
- Three of the patients had cellulite after pregnancy (15%).
- One of the patients started developing cellulite just before menopause (5%).
- Two patients had formation of cellulite after taking medication, specifically anti-hypertensive medication and cortisone (10%).
- Two patients had cellulite after weight gain (10%).
- In one of the patients the formation of cellulite coincided with a change in diet (5%).
- In six patients no significant causes for the onset of cellulite were found (30%).

These results are similar to those stated by Legrand (1985) and Cellulite Today (1991) indicating a link between cellulite formation and hormonal changes.

Diet

Except for the patient who gained and lost so much weight and was therefore not included in the study, none of the patients had a significantly unhealthy diet. A more detailed study of the individual diets would have been beneficial.

Exercise

Of the twenty patients, only eight exercised regularly, i.e. for more than half an hour, at least three times per week. This represents 40 % of the sample. Regular exercise is one of the factors preventing cellulite, as it improves the circulation.

Smoking

Of the twenty patients, three smoke regularly, i.e. 15 % of the sample.

Water

Of the twenty patients, thirteen drank less than 2 litres or eight glasses of water per day. This represents 65 % of the total sample. All were encouraged to increase their daily intake of water.

As can be seen from the results in chapter four, no significant changes occurred in either of the two groups with respect to the changes in the percentage body fat, the body mass index as well as the various girth measurement. This is shown by the fact that there are only very slight

variations in the median values. This implies that throughout the treatment most of the measured values remained relatively constant.

The z value for the changes in body mass index between visits one and four in the homoeopathically treated group is 0.108, i.e. relatively close to 0.05. The same is found for the changes in left leg and right leg girth in the placebo groups, with z values of 0.139 and 0.138, respectively. This might be due to one of two reasons: a true change in the body mass index or it may be due to chance.

A number of patients reported improvement, i.e. their clothes were looser, their skin felt smoother etc., but this happened in both the placebo and homoeopathic treatment groups and was not supported by changes in measurements.

There are a number of reasons which may have played a role in explaining why there are no significant changes in percentage body fat, body mass index or girth in either of the two groups. These are dealt with below.

Cellulite is mostly a long standing condition. In the participants of this study its duration varied between 3 and 20 years, the average being 11 years. In homoeopathic treatment one usually considers that it will take one month of treatment for every eight months of disease. In the above cases that would mean that the treatment should be at least 4½ months to

2½ years long. Clearly the treatment period of three months was too short.

One of the principles of homoeopathy is similimum prescription, which means that each patient is given the medicine which fits them, at that moment, the best, i.e. the similimum. In this study all patients on homoeopathic treatment were given Natrum sulphuricum, which may or may not have been their similimum. This may have played a role in the lack of conclusive results.

As cellulite is due to a number of different causes, and as these vary amongst individuals, research into the homoeopathic treatment of cellulite should take all of these into account. As can be seen from above, factors such as lack of exercise, insufficient fluid intake, smoking etc. are found in people with cellulite and research into treatment of cellulite should ideally exclude all of these variables. Unfortunately, however, patient compliance then often is a problem. More research, with larger sample sizes, needs to be done into the treatment of cellulite by simple inexpensive means.

In conclusion, the purpose of this research project was to establish whether the use of homoeopathically prepared Natrum sulphuricum in a 9 CH potency in conjunction with massage over a three month period would prove to be more effective in the treatment of cellulite than massage alone.

During the course of this study it was found that the onset of cellulite was related to hormonal changes in most of the participants. Factors such as smoking, lack of exercise and insufficient fluid intake also contributed to the formation of cellulite. This concurs with the findings in the literature on cellulite (Ronsard, 1973; Legrand, 1985; Moran, 1989; Hodgkinson, 1989; Kenton, 1992; Ronsard 1992).

From the results in Chapter four it can be seen that the treatment of cellulite using Natrum Sulphuricum 9 CH together with massage is not more viable than the treatment of cellulite using massage alone. A number of reasons for the absence of significant results have been postulated. These include the fact that the treatment period was probably not long enough to produce significant change, also that homoeopathic prescription should be similimum prescription and the fact that the cause of the cellulite was not taken into consideration.

As cellulite affects many women, it is necessary that an efficient, gentle, lasting and cost-effective form of treatment be found.

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APPENDICES

APPENDIX A - PARTICIPANT CONSENT FORM

The purpose of this study is to evaluate the efficacy of the treatment of cellulite with Homoeopathic medicine in conjunction with massage.

The change in cellulite will be measured in terms of changes in girth, skin fold thickness and body mass index (BMI). These measurements will be taken four (4) times: at the beginning of the study, after the first month, after the second month and at the end of the study (after the third month).

As a participant in this study, you will need to have cellulite massages twice (2) a week for three (3) months, preferably at the Technikon Beauty Salon, Salon Technique. These will be paid for by the Technikon. You will also be required to come in to see me for four (4) assessments, see above, for which appointments must be made.

Participants in this study will be randomly divided into two (2) groups. Both groups will receive massages. One of the groups will receive homoeopathic medicine, the other group will receive placebo. Neither the participants of the study, nor the researcher will know what group the participant is in. The medicine must be taken twice (2) daily for three (3) months.

I, the undersigned, hereby agree to take part in, and to comply with all the requirements of, the above mentioned study conducted by Brigitte Spitze, BSc (Wits), at Technikon Natal.

I understand that all information that I volunteer will be regarded as confidential.

.....
Name

.....
Date

.....
Signature

.....
Witness

APPENDIX B - SAMPLE CASE HISTORY

Patient's Details

Name:

Date:

Address:

Tel:

Date of Birth:

Age:

Occupation:

Marital Status:

Allergies:

Medication:

Past medical history:

Past surgical history:

Family history:

Recent travel:

Factors affecting cellulite

History:

Age of onset:

Duration:

Significant events:

Pain:

Stage (from examination):

Any previous treatment tried:

Smoking:

Yes/No

Brand:

How many daily:

How many years:

Exercise:

Yes/No

Type:

Duration:

Frequency:

How many weeks/months/years:

Water:

Daily intake:

Diet:

Breakfast:

Lunch:

Supper:

Snacks:

Fresh fruit/vegetables:

Refined sugar/starch:

Dietary fat:

Salt intake:

Soft-drinks;

Hormonal:

Start of menses (menarche):

Length of menstrual cycle:

Regularity:

Dysmenorrhoea:

Menopause:

Pregnancies:

Toxins:

Coffee: Yes/No

Percolated/Instant

Daily intake:

Weekly intake:

Tea: Yes/No

Regular/Rooibos/Herbal tea

Daily intake:

Weekly intake:

Alcohol: Yes/No

Type:

Daily intake:

Weekly intake:

Food additives:

Food preservatives:

Systemic history:

Head

E.N.T

Respiratory

Digestive

Urinary

Genital

Circulatory

Skin

Locomotor

Nervous

Physical examination

Vital signs: Blood pressure

Pulse: Rate and rhythm

Resp. rate

Temperature

Height

Weight

Body mass index

PARTICIPANT'S FOLLOW UP

Name:

Date:

Consultation: First Second Third Final

1. GIRTH MEASUREMENTS

Dominant side: Right Left

	Reading 1	Reading 2	Average
Waist			
Hips			
Buttocks			
Left Thigh			
Right Thigh			

2. SKIN FOLD MEASUREMENTS

	Reading 1	Reading 2	Reading 3	Average
Triceps				
Sub-scap				
Abdom.				
Supra-il				
Up thigh				
Calf				
Sum				
% Fat				

3. BODY MASS INDEX

Height	
Weight	
BMI (kg/m ²)	