



# 'Anatomical Basis of Dimple on Face' A Cross Sectional Study

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## Abstract

**Background:** Anatomically, cheek dimples are thought to be caused by a double or bifid zygomaticus major muscle, whose fascial strands insert into the dermis and cause a dermal tethering effect. The different types of face dimples are Fovea Buccalis-Dimple on cheeks and Fovea Mentalis-Dimple on the chin. The other types of dimples are Fossa Supraspinous-Dimple on the shoulder, Elbow dimples, Fossae Lumbales Laterale-Dimple on the back. The occurrence of dimples on the face is an autosomal dominant trait. Cheek dimples are believed to occur on chromosome 16, whereas cleft chin dimples occur on chromosome 5.

**Introduction:** Cheek dimples are usually considered as an attractive feature of facial beauty. Literature on dimple creation surgery (dimpleplasty) is sparse. So this study was conducted to find out the Anatomical Basis of Dimple on Face. It was done by Miss. Tanya Mahajan, 2019 Batch M.B.B.S. student during her electives posting in Department of Anatomy, JNUIMSRC, Jaipur, and Rajasthan under the guidance of senior faculty.

**Aims and Objectives:** To explore the Anatomical basis of dimples on face especially cheek dimples

**Materials and Methods:** After taking written informed consent, 150 students' (1st year M.B.B.S, Batch 2022) faces were screened for any dimples on cheek. This study was conducted at Jaipur National University, Institute of Medical Sciences and Research Centre, Jaipur, Rajasthan. Institutional Ethical Committee Permission is not needed as the present study is just a Observational study. By observing various beautiful faces of girls and boys, observations and conclusions were made.

**Observations and Results:** Beauty lies in the Eyes of Beholder.

**Keywords:** Cheek Dimples; Zygomaticus Major Muscle; Autosomal Dominant Trait; Dimpleplasty

**Abbreviations:** AETCOM: Attitude, Ethics and Communication.

## Introduction

Anatomically, cheek dimples are thought to be caused by a double or bifid zygomaticus major muscle, whose fascial strands insert into the dermis and cause a dermal tethering effect [1,2]. The different types of face dimples are Fovea Buccalis-Dimple on cheeks and Fovea Mentalis-Dimple on

the chin. The other types of dimples are Fossa Supraspinous-Dimple on the shoulder, Elbow dimples, Fossae Lumbales Laterales-Dimple on the back. The occurrence of dimples on the face is an autosomal dominant trait. Cheek dimples are believed to occur on chromosome 16, whereas cleft chin dimples occur on chromosome 5 [3,4].

Cheek dimples are usually considered as an attractive feature of facial beauty. Unfortunately, not all beautiful girls have dimples. Literature on dimple creation surgery is sparse.

Many Plastic surgeons and Dermatologists have introduced a variety of newer techniques of dimpleplasty. Their aim was to analyse the positive and negative findings of this technique. They used dimpleplasty procedure in creation of dimples under local anaesthesia as a daycare procedure. This procedure is safe, reliable and easily reproducible. As no tissue is excised, chances of bleeding and haematoma formation are negligible. With this procedure, the patient satisfaction rate is very high, and patients seen long time after surgery continue to be pleased with their surgically created dimples. Though the procedure has known advantages and disadvantages.

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### Review of Literatures

1. Romantic love lasts a year. After that 'attachment love' sets in.
2. According to some psychologists, human beings are not capable of being 'just friends' with members of opposite sex.
3. According to a study, a woman is more attracted to a man when she is uncertain about how much he likes her.
4. If you want to know if someone loves you, look at his/her eyes: the pupil expands as much as 45% when we are in love.
5. Mimicry is a sign of attraction. Research has shown that we mimicry the actions of people we are attracted to.
6. When you become really close to someone, you can hear their voice in your head when you read their texts.
7. People generally prefer an attractive face over an attractive body when they are looking for a long-term relationship.
8. Psychologically, it is impossible to be just friends with someone you have fallen in love with.
9. Based on a psychological study: a crush only lasts for a maximum of 4 months. If it exceeds, you are already in love.
10. When a man finds a woman attractive, he may stick his guts, flex his muscles, and take postures that make him appear taller and stronger.
11. Hugs that lasts over 20 seconds, release a chemical in your body, called '**oxytocin**' that makes you trust someone more.
12. Couples who spend at least 10 minutes a day laughing together are more likely to have a stronger relationship.
13. A survey has found that fit legs are sexiest part of a woman, according to men.
14. When a guy really likes a girl, he can't help but tell his friends about her.
15. If you hold hands with someone you love, it can help alleviate physical pain as well as stress and fear.
16. According to a study, if you are always the one to text a person first, there is a 90 % chance that this person is not interested in you.
17. Within 5 seconds of meeting someone, you make a lasting impression based on the following order: First how they look, Second, how you sound and third, what you say.
18. It is impossible to remain angry at someone you truly love. Anger lasting for more than 3 days indicates that you are not in love.
19. Love can leave a memory that no one can steal, but can also leave a pain that no one can heal.
20. The more you talk about someone, the more you fall in love with that person.
21. When lovers gaze into each other's eyes, their heart rate synchronize as well.
22. Sleep deprived men are more likely to assume that woman want to have sex with them.
23. Men in their early 20s feel more emotional pain after a break up than woman.
24. People prefer symmetrical faces in their partners because it is unconsciously believed that they have better genetics.
25. Women's tear have been biologically proven to reduce testosterone levels and arousals
26. Men are more attracted to women who possess a bone structure that resembles that of their mothers
27. Studies have shown that happiness is contagious. It can be hard for people to walk away from someone who is happy, or not love someone who is happy simply because they are enjoyable to be around
28. Women felt that men became more attractive if they saw other women smiling at them
29. People are most likely to break up once they have hit the three to five-month period in their relationships
30. Men who possess deeper voices are more likely to appear attractive or make an impression on women than men who possess higher voices.
31. Simply looking at a picture of a loved one can help relieve pain
32. Research has shown that intense or traumatic events, such as break ups, divorce, physical distance or the loss

of a loved one can contribute to real physical pain in a person's heart. This is an actual condition known as the 'Broken Heart Syndrome'

33. The simple act of expressing gratitude towards people whom you love will generate an immediate spike in happiness.
34. If you get dumped or were a dumper, be careful. Being dumped could lead to 'frustration attraction'. Frustration attraction only means that the individual who was dumped will love and lust the person who dumped them even more.
35. Engagement rings are often worn on the fourth finger of the Left hand because the ancient Greeks maintained that the finger contains the vena amoris, or the 'vein of love' that (love) runs straight to the heart.
36. The term 'love' is from the Sanskrit lubyati meaning 'desire'.
37. Women around the world are more likely to fall in love with partners with ambitions, education, wealth, respect, status, a sense of humour and who are taller than they are. Women also prefer distinctive cheekbones and a strong jawbone which are linked to testosterone levels
38. Women often feel loved when talking face to face with their partner, men on other hand, often feel emotionally close when they work, play or talk side by side.
39. 23% of the couples who meet through online dating end up marrying
40. People with relatively prudent and reliable partners tend to perform better at work, earning more promotions, making more money and feeling more satisfied with their jobs, according to research.
41. A survey revealed that 52% of women say their husband is not their soul mate.

## Observations and Results

1. No any student is found with cheek dimples.
2. All 150 faces including girls and boys are mesmerizingly beautiful
3. Beauty depends on the eyes of the beholder
4. Artificial invasive beauty enhancing procedures should be avoided. Instead AETCOM (Attitude, Ethics, and Communication) should be inculcated in mind and body. A beautiful mind will give rise to a beautiful face. Mind and Body are interdependent and work harmoniously.
5. Internal beauty matters than the external temporary beauty. It's eternal.
6. It is possible to create dimples on face naturally by simple face exercises.

## Discussion

Numerous cultures believe that cheek dimples are a good luck charm that entices people who perceive them as physically

attractive, but they are also associated with heroism and innocence, which has been included in literature for many centuries. Dimples on a woman make her extra attractive and very cute. Studies show that 90% of men get attracted to women who have these little dents in their cheeks. The dimples make people look more youthful or approachable. Individuals with dimples are believed to be blessed with good luck, beauty, and happiness in life. There is no doubt that dimples are really adorable and oftentimes, desirable. Upper cheek dimples, known as "Indian Dimples" in Korean, are some of the rarest dimples in the world. Dimples are usually considered a dominant genetic trait, which means that one copy of the altered gene in each cell is sufficient to cause dimples. Even though over the years medical science has proven that dimple occurs as a result of genetic deformity, it is still the most wanted kind of deformity most people wish for. Fortunately for this set of people, technology has made it possible for people to artificially get dimples of their own. Throughout numerous cultures and history, there have been superstitions based on dimples: Chinese culture believes that cheek dimples are a good luck charm (particularly, children born with them are seen as pleasant, polite, and enthusiastic), but can lead to complicated romantic relationships; Haitian mothers gently form indents into newborns' cheek in hopes of molding dimples into the child's face, and a proverb (often incorrectly credited to Pope Paul VI) argues "A dimple in your cheek/Many hearts you'll seek/A dimple in your chin/The devil within". Dimples could be transient or permanent, depending on the cause or factor responsible for their occurrence. The process of growth and development could contribute to this. Excessive fat deposition, which disappears with the aging process, causes transient dimples, so also is the stretching or lengthening of muscles during growth, leading to gradual obliteration of the defect.

According to Omotso GO, Adeniyi PA (2010) [5], dimples could be transient or permanent, depending on the cause or factor responsible for their occurrence. The process of growth and development could contribute to this. Excessive fat deposition, which disappears with the aging process, causes transient dimples, so also is the stretching or lengthening of muscles during growth, leading to gradual obliteration of the defect [6].

R Lari, Nikhi (2012) [6] in their study did follow-up of the patients after using a new and simple technique for dimple creation, passing a transcutaneous bolster stitch after scraping off the dermis of all mucomuscular attachments ranged from 3 weeks to 4 years. Of the 100 dimples, only 3 had intraoral infection around the bolster, probably because of too tight bolster leading to ischaemia of the mucosa and poor maintenance of oral hygiene. These were managed by removal of bolster and by antibiotic supplementation. The infection had no adverse effect on the dimple and probably

accentuated the dimple because of excessive scarring. Two patients demanded reduction in the dimple size. Partial reduction of the scar was done by releasing the scar intra orally and injecting 0.5 ml of hyaluronic acid in the defect. Three patients demanded accentuation of the dimple for which a redo procedure was done. There was no incidence of haematoma, bleeding or injury to the buccal branch of the facial nerve in any of the patients. By the end of 3 months after the surgery, there was only a small hint of the dimple which was seen without animation and which accentuated on animation. With time, the small dent gradually diminished, but a definite dent was still seen on follow-up to 4 years. The patient satisfaction rate was very high, and patients seen long time after surgery continue to be pleased with their surgically created dimples. None of the patients in the series demanded a complete dimple reversal surgery [7].

Mary Antony Praba, et al. [7] in their cadaveric study found only 2 faces with bifid zygomaticus major along its insertion out of 10 hemi faces.

In a study by Kumar, et al. [8] In a study by Kumar et al, it was observed that 152 dimples lay on the KBC point (45.2%) and 184 lay elsewhere on the face (54.8%). Occurrence of dimple is equal between men and women and are genetically inherited as an autosomal dominant trait. In their study, they found women are more in number with dimples [9].

Mahabaleshwara Chalathadka, et al. [9] studied to assess the prevalence, location, distribution pattern of dimple with sex, position, depth of the dimple, and also the variation in distance from standard KBC point to the naturally occurring dimple among population of Sullia taluk, Dakshina Kannada district, Karnataka, India . Their study aimed toward assessing the region wise prevalence, position, and size of the dimple. They screened a total of 1462 people for the occurrence of natural dimples in face. Among them, 121 were found to have natural dimples, 108 were women (89.25%), and 13 were men (10.75%). In total, 112 people had only cheek dimples, 6 had cheek dimples along with dimples in other regions of the face such as chin or malar region and 3 had only chin dimple. Unilateral cheek dimples (72.88% [86]) were more common than bilateral (27.11% [32]). Occurrence of cheek dimples was more on the right cheek (52) than on the left cheek (34). Among 150 cheek dimples in 118 people, 91 dimples (60.66%) were at the point of intersection of the midpoint of the vertical line from outer canthus of eye to horizontal line from corner of the mouth, which is referred as Kho Bhoo-Chai's point (KBC point) and 59 dimples (39.33%) did not lie on it. Among these 59 dimples, the mean distance from the KBC point to the midpoint of naturally occurring dimple was about 9.86 mm anteriorly from the KBC point [10].

Jae Min Chung, et al. [10] conducted the study to share our surgical tips and clinical experiences regarding safe dimple creation surgery. They found that of the 2,048 patients, 159 (7.7%) underwent reoperation. The reason for reoperation was under correction in 78 cases (49.0%), disappearance of the dimple in 62 cases (38.9%), and overcorrection in nine cases (5.6%). Five patients (3.1%) had their stitches removed to eliminate the created dimple because they changed their minds, and five patients (3.1%) had their stitches removed because of infection. No patients reported complications after reoperation, and no other complications, such as hyperpigmentation or foreign body reaction, were observed. They concluded that safe surgery with minimal complications and satisfying cosmetic results can be achieved via accurate knowledge of the relevant anatomy and its relationship with dimples, as well as appropriate surgical methodology.

### Declaration of students 'consent

The authors certify that they have obtained all appropriate students 'consent forms

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