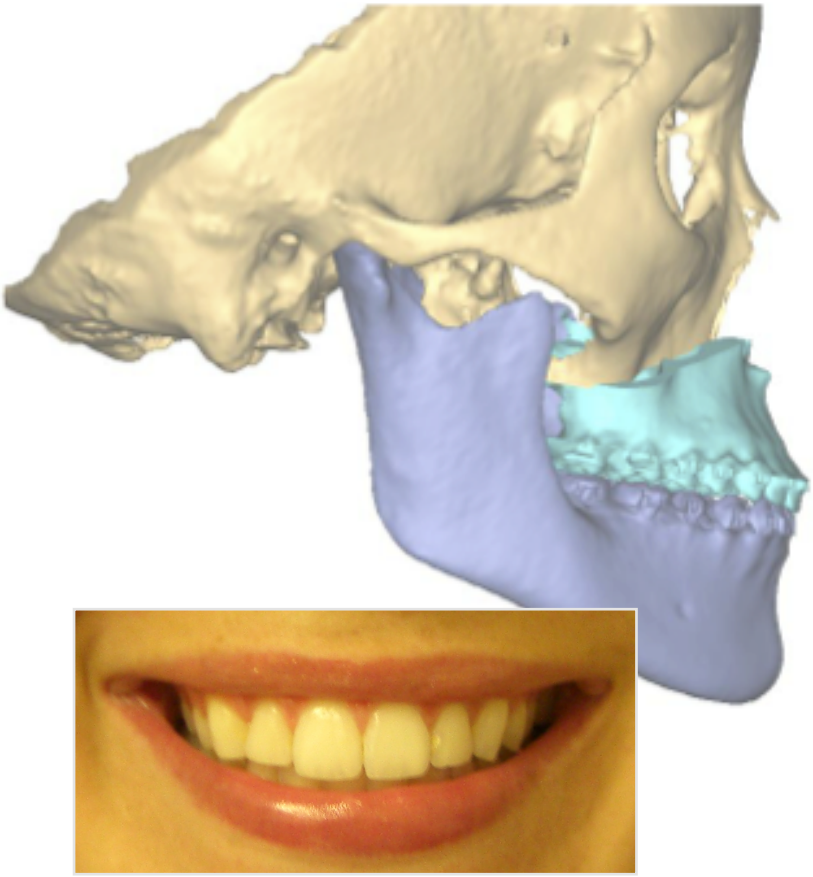
The Psychological Impact of Corrective "Orthognathic" Jaw Surgery



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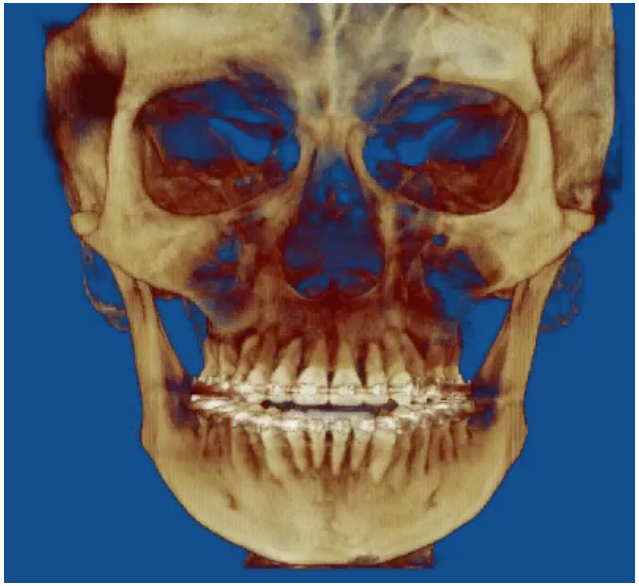
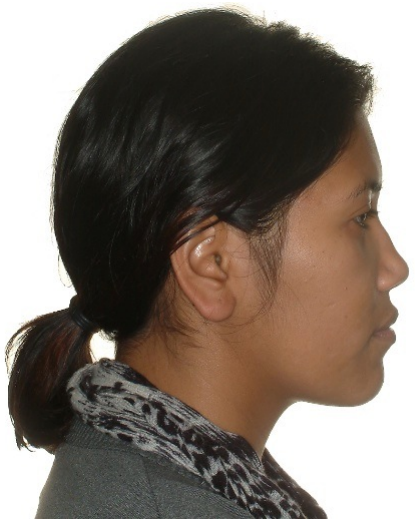
STANFORD ORAL MEDICINE &
MAXILLOFACIAL SURGERY

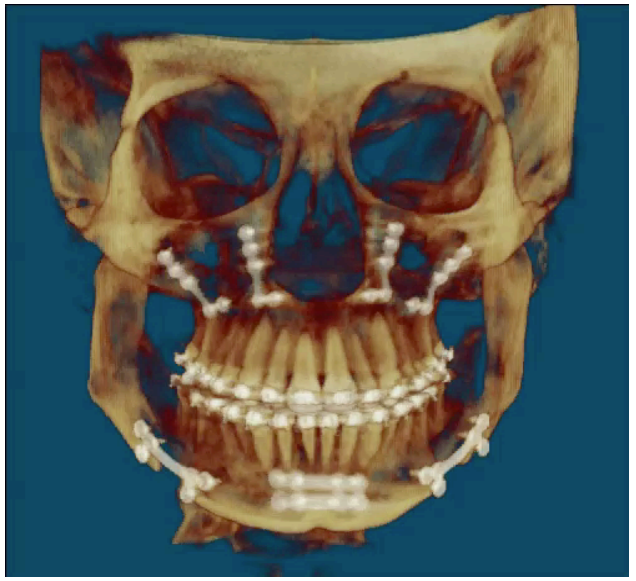
What is "Orthognathic" Jaw Surgery?



When the jaws have grown out of alignment and can not be corrected with braces…

What is "Orthognathic" Jaw Surgery?

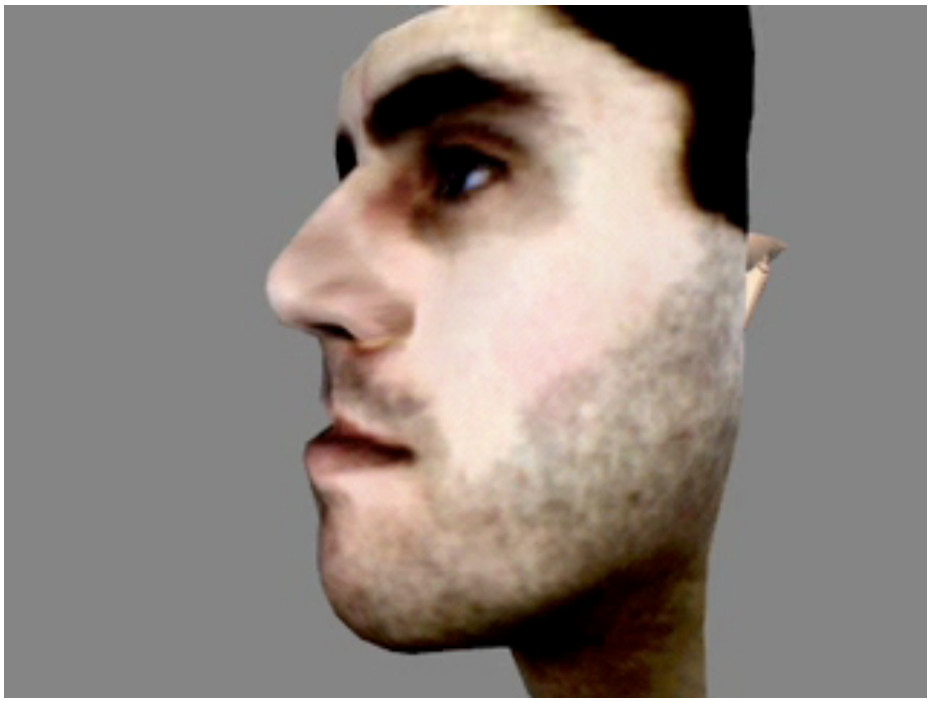




…we correct the misalignment of the upper and/or lower jaw achieve a normal bite and facial balance.

Double Jaw or "Bimax" Surgery

Surgery in the upper and lower jaw at the same time.



Objective

- To evaluate the effect of jaw deformity correction surgery on the psychological health of patients in regards to depression, anxiety and signs of Obsessive Compulsive Disorder “OCD” .
- To evaluate the effect of jaw deformity correction surgery on the quality of life
- To evaluate the effect of jaw deformity correction surgery on self evaluation of body image

Subjects

- N=90 patients (37 males, 53 females) who were referred to Stanford Oral and Maxillofacial Surgery between 2010 to 2017
- Inclusion criteria:
  - had a dento-skeletal deformity in need of undergoing orthognathic surgery, which included BSSO, Le Fort I osteotomy, genioplasty, or surgically assisted rapid palatal expansion (SARPE), and orthodontic treatment
  - no history of TMD
  - agreed to participate in the study and signed informed consent.
- Exclusion criteria
  - congenital anomalies
  - history of trauma
  - absence of or disagreement with informed consent

ORTHOGNATHIC SURGERY PATIENTS TIMELINE

	FIRST VISIT*	**PREOP VISIT*** 17 DAYS before Surgery	**1. POSTOP** 10 DAYS	**2. POSTOP** 31 DAYS	**FINAL** 6-12 MONTHS
XRAYS	AS NEEDED FOR INSURANCE (2D OK)	CBCT PHOTOS ITERO *(C-dental protocol: Full CBCT, itero; reformat incl airway. Patient pay)*	*(GIVE REFERRAL FOR CBCT/PHOTOS FOR 2. POSTOP VISIT.* ***TO BE DONE ON DAY OF 2. POSTOP or 2 DAYS PRIOR to 2.POSTOP to let swelling go down****)*	CBCT PHOTOS *(C-dental protocol: Full CBCT, no itero; reformat incl airway. Patient pay)*	CBCT PHOTOS *(C-dental protocol: Full CBCT, no reformatting, no itero; we pay 185USD)*
Psych Study	CONSENT Test of knowledge All Q	*If not done at first visit:* CONSENT Test of knowledge All Q		All Q	All Q

Questionnaires list:
1. Test of knowledge (only pre-op twice: first visit and/or 17 days preop visit)
2. Beck Anxiety Inventory
3. Nine symptom checklist
4. BIDQ
5. Patient self-evaluation (A & B)
6. Pre-operative questionnaire
7. Quality of life questionnaire for patient having corrective jaw surgery

** Patients may participate in **GROUP EDUCATION** between first and preop visit. All tests to be completed latest during group education.*

1-Body Image Disturbance Questionnaire (BIDQ)

This **seven-item scale** measures degrees of **negative body image** on a five-point Likert scale.

The questions focus on the impact of a physical attribute on the individual's psychosocial functioning.

This currently revised version of the 7-item Body Dysmorphic Disorder Questionnaire (Dufresne et al., 2001; Phillips, 1996) also consists of seven items: (1) concern about some part(s) of the body felt to be unattractive; (2) **mental** preoccupation with these concerns; (3) experiences of emotional distress over the "defect"; (4) its production of impairment in **social, occupational**, or other important areas of functioning; (5) its interference with social life; (6) interference with school, job, or role functioning; (7) **avoidance of things** due to the "defect".

Items 1, 2, and 5–7 also ask for an open-ended clarification of responses (e.g., nature of the perceived "defect," examples of its effects or interference with one's life, etc.) that might be informative in clinical contexts or qualitative research. The current study yielded an internal consistency (Cronbach's alpha) of .89 for the BIDQ.

2-Beck Anxiety Inventory (BAI)

This 21-item Likert scale is used to measure the severity of an individual's **anxiety** and has been shown to be valid and highly internally consistent.

Individuals **rate the extent to which they are bothered by a particular symptom based on a four-point scale** from 0 (no bother at all) to 4 (cannot stand it), with higher scores denoting greater anxiety Beck AT, Steer RA, Carbine MG. Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psych Review*: 1988: *8*.1: 77-100.

The first principal factor analysis (Beck et al., 1988) was done with a sample of 160 psychiatric outpatients. It revealed two factors: **somatic**, which included the 12 items describing physiological symptoms, such as "numbness or tingling," "feeling dizzy or lightheaded" and others; and **subjective anxiety and panic**, which included the remaining nine items of the BAI, such as "fear of the worst happening" and "unable to relax." However, factor loadings for some of the items were rather low.

3-Florida Obsessive-Compulsive Index (FOCI)

This 25-item scale is used to measure the **presence and severity of obsessive-compulsive symptoms** and is internally reliable and valid.

The FOCI is divided into a Symptom Checklist and a Severity Scale. Higher scores on the Severity Scale correspond with greater symptom severity.

Higher scores on the Symptom Checklist correspond with presence of numerically more symptoms. Aldea MA, Geffken GR, Jacob ML, Goodman WK, Storch EA. Further psychometric analysis of the Florida Obsessive-Compulsive Inventory. J Anxiety Disord 2009: 23: 124-129

A strength of the FOCI is that it offers a quick evaluation of both presence and severity of OCD symptoms. An important limitation is that the FOCI does not assess the severity of individual symptoms.

APPENDIX A

The Florida Obsessive Compulsive Inventory

General Instructions: The questions below are designed to help health professionals evaluate anxiety symptoms. Keep in mind, a high score on this questionnaire does not necessarily mean you have an anxiety disorder — only an evaluation by a health professional can make this determination. Answer these questions as accurately as you can.

Part A instructions
Please circle YES or NO for the following questions, based on your experience in the past MONTH:

Have you been bothered by unpleasant thoughts or images that repeatedly enter your mind, such as:			
1	Concerns with contamination (dirt, germs, chemicals, radiation) or acquiring a serious illness such as AIDS?	YES	NO
2	Overconcern with keeping objects (clothing, tools, etc) in perfect order or arranged exactly?	YES	NO
3	Images of death or other horrible events?	YES	NO
4	Personally unacceptable religious or sexual thoughts?	YES	NO
Have you worried a lot about terrible things happening, such as:			
5	Fire, burglary or flooding of the house?	YES	NO
6	Accidentally hitting a pedestrian with your car or letting it roll down a hill?	YES	NO
7	Spreading an illness (giving someone AIDS)?	YES	NO
8	Losing something valuable?	YES	NO
9	Harm coming to a loved one because you weren't careful enough?	YES	NO
Have you worried about acting on an unwanted and senseless urge or impulse, such as:			
10	Physically harming a loved one, pushing a stranger in front of a bus, steering your car into oncoming traffic; inappropriate sexual contact; or poisoning dinner guests?	YES	NO
Have you felt driven to perform certain acts over and over again, such as:			
11	Excessive or ritualized washing, cleaning or grooming?	YES	NO
12	Checking light switches, water faucets, the stove, door locks or the emergency brake?	YES	NO
13	Counting, arranging; evening-up behaviors (making sure socks are at same height)?	YES	NO
14	Collecting useless objects or inspecting the garbage before it is thrown out?	YES	NO
15	Repeating routine actions (in/out of chair, going through doorway, relighting cigarette) a certain number of times or until it feels **just right**?	YES	NO
16	Needing to touch objects or people?	YES	NO
17	Unnecessary rereading or rewriting; reopening envelopes before they are mailed?	YES	NO
18	Examining your body for signs of illness?	YES	NO
19	Avoiding colors ("red" means blood), numbers ("13" is unlucky) or names (those that start with "D" signify death) that are associated with dreaded events or unpleasant thoughts?	YES	NO
20	Needing to "confess" or repeatedly asking for reassurance that you said or did something correctly?	YES	NO

If you answered YES to one or more of these questions, please continue with Part B.

APPENDIX A

The Florida Obsessive Compulsive Inventory (continued)

Part B instructions The following questions refer to the repeated thoughts, images, urges or behaviors identified in Part A. Consider your experience during the past 30 days when selecting an answer.
Circle the most appropriate number from 0 to 4.

In the past month...					
1. On average, how much *time* is occupied by these thoughts or behaviors each day?	0 None	1 Mild (less than 1 hour)	2 Moderate (1 to 3 hours)	3 Severe (3 to 8 hours)	4 Extreme (more than 8 hours)
2. How much *distress* do they cause you?	0 None	1 Mild	2 Moderate	3 Severe	4 Extreme (disabling)
3. How hard is it for you to *control* them?	0 Complete control	1 Much control	2 Moderate control	3 Little control	4 No control
4. How much do they cause you to *avoid* doing anything, going anyplace or being with anyone?	0 No avoidance 0	1 Occasional avoidance	2 Moderate avoidance	3 Frequent and extensive avoidance	4 Extreme avoidance (house-bound)
5. How much do they *interfere* with school, work or your social or family life?	0 None	1 Slight interference	2 Definitely interferes with functioning	3 Much interference	4 Extreme interference (disabling)

For clinician use:
Sum on Part B

(Add Items 1 to 5): _____

Keep in mind, a high score on this questionnaire does not necessarily mean you have an anxiety disorder — only an evaluation by a health professional can make this determination.

4-Patient Health Questionnaire-9 (PHQ-9)

This nine-item **depression module** from the full PHQ is designed to measure depressive symptoms and is internally reliable and valid

Summed scores of 1-4 indicate minimal depression, 5-9 indicate mild depression, 10-14 indicate moderate depression, 15-19 indicate moderately severe depression, and 20-27 indicate severe depression.

Thus the questionnaire is a useful tool to assist clinicians in diagnosing depression and monitoring the response to treatment. It is also a reliable and valid measure of depression severity