# A Descriptive Clinical Study to Stratify Incisal Translucency Patterns

## Type I



**Male**    **Female**

## Type II



**Male**    **Female**

## Type III



**Male**    **Female**

## Type IV



**Male**    **Female**

**INTRODUCTION-** A smile is one of the most important interactive communication skills of a person. Changes in enamel and dentin with aging causes differences in translucency patterns of natural teeth. The ultimate objective of aesthetics in dentistry is to create a beautiful smile with teeth of pleasing inherent properties to one another.

**AIM of the STUDY-** To investigate the incisal translucency patterns of vital permanent maxillary central incisors in a convenient sample of Indian population stratified into 3 age groups and gender.

**MATERIALS and METHODOLOGY-** A total of 120 subjects with equal gender balance from 3 age groups were selected.
**INCLUSION** criteria- permanent vital maxillary central incisors of the considered age groups.
**EXCLUSION** criteria- wasting disease, dental caries, restorations, non-vital, orthodontic treatment, history of trauma, discolorations.
Digital imaging was done using Nikon D90 SLR with macro lens and 1:1 ratio.
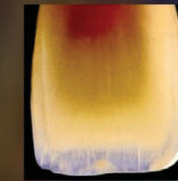
**Type I** Translucency infiltrating mamelons

**Type II** Translucency parallel to incisal edge

**Type III** Distinct proximo-incisal translucency

**Type IV** Mixed translucency with pigmentation

**RESULTS-** Statistical analysis was performed using Chi square test and the interaction between age and gender was found to be Statistically Significant with $p = 0.026$ for males and $p = 0.002$ for females

Table 1: Distribution of study sample in each incisal pattern by age group & sex

| Age group | Type I | | Type II | | Type III | | Type IV | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| 12-20 | 5 (25) | 10(50) | 3(15) | 1(5) | 2(10) | 4(20) | 10(50) | 5(25) | 20(100) | 20(100) |
| 21-30 | 4(20) | 2(10) | 5(25) | 4(20) | 8(40) | 8(40) | 3(15) | 6(60) | 20(100) | 20(100) |
| 31-40 | 0(0) | 0(0) | 3(15) | 2(10) | 5(25) | 13(65) | 12(60) | 5(25) | 20(100) | 20(100) |
| Total | 9(15) | 12(20) | 11(18.3) | 7(11.7) | 15(25) | 25(41.7) | 25(41.7) | 16(26.7) | 60(100) | 60(100) |

Numbers in the parenthesis indicate sex wise row percentage

Table 2: Distribution of study sample according to incisal patterns

| Incisal patterns | Number | Percentage |
|---|---|---|
| Type I | 21 | 17.5 |
| Type II | 18 | 15.1 |
| Type III | 40 | 33.3 |
| Type IV | 41 | 34.1 |
| Total | 120 | 100 |

Table 3: Distribution of study sample according to Incisal pattern & sex

| Incisal patterns | Male | | Female | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| Type I | 9 | 15 | 12 | 20 |
| Type II | 11 | 18.3 | 7 | 11.7 |
| Type III | 15 | 25 | 25 | 41.7 |
| Type IV | 25 | 41.7 | 16 | 26.7 |
| Total | 60 | 100 | 60 | 100 |
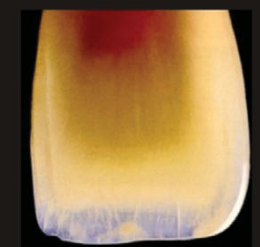
**CONCLUSION-** The most common pattern in males aged 12-20 years are Type IV (50%) and females are Type I (50%). Males aged 20-30 years are Type III (40%) and females are Type III (60%). Males aged 30-40 years are Type III (65%) and females are Type IV (60%).
The most common pattern in Indian population is Type IV (34.1%) followed by Type III (33.3%), Type I (17.5%) and Type II (15.1%).

**CLINICAL SIGNIFICANCE-** To achieve full aesthetic integration, the optical properties of resin composites must be understood, analyzed and tested prior to placement of the final restoration.
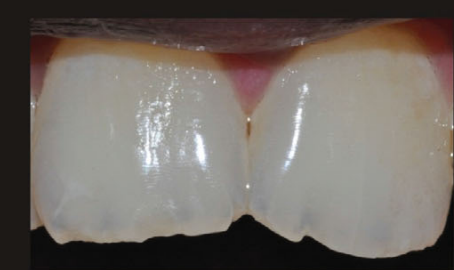
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