



เอกสารอ้างอิง

1. Broadbent, H.B., "A New X-ray Technique and its Application to Orthodontia," A.J.O., 51 (2), 93-114, 1981.
2. Higley, L.B., "Lateral Head Roentgenograms and Their Relation to the Orthodontic Problem," A.J.O., 26 (8), 768-778, 1940.
3. Margolis, H.I., "Standardized X-ray Cephalographics," A.J.O., 26 (8), 725-740, 1940.
4. Mulick, J.E., "Clinical Use of the Frontal Headfilm," A.O., 35 (1), 299-304, 1965.
5. Broadbent, H.B., Sr., Broadbent, H.B., Jr, and Golden, W.H., Bolton Standard of Dentofacial Developmental Growth, pp. 1-109 C.V. Mosby Co., Saint Louis, 1975.
6. Sassouni, V., "Position of the Maxillary First Permanent Molar in the Cephalofacial Complex," A.J.O., 43 (7), 477-510, 1957.
7. Letzer, G.M., and Kronman, J.H., "A Posteroanterior Cephalometric Evaluation of Craniofacial Asymmetry," A.O., 37, 205-211, 1967.
8. Vig, P.S., and Hewitt, A.B., "Asymmetry of the Human Facial Skeleton," A.O., 45 (2), 125-131, 1975.
9. Shah, S.M., and Joshi, M.R., "An Assesment of Assymetry in the Normal Craniofacial Complex," A.O., 48 (2), 141-148, 1978.
10. Ricketts, R.M., "Perspectives in the Clinical Application of Cephalometrics," A.O., 51 (2), 115-150, 1981.
11. \_\_\_\_\_, Bioprogressive Therapy, 1<sup>st</sup> ed., Rocky Mountain Co., 1971.

12. วัตนะ มธุรสชัย และ สมรตรี วิถีพร, ความสัมพันธ์ระหว่างอายุกับการเจริญเติบโตของกระดูกมือและข้อมือในเด็กไทยอายุ 8-16 ปี," วารสารบัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย, 6, 25-40, 2528.
13. McCall, J.O., and Wald, S.S., Clinical Dental Roentgenology., pp. 60-61, 76-81, W.B. Saunder Company, Philadelphia, 4<sup>th</sup> ed., 1958.
14. Ennis, L.M., Berry, H.M., and Phillips, J.E., Dental Roentgenology, p. 180, Lea & Febiger Philadelphia, 6<sup>th</sup> ed., 1967.
15. Meschan, I, Radiographic Positioning and Related Anatomy, pp. 101-103, W.B. Saunder Company Philadelphia, 1968.
16. Frommer, H.H., Radiology for Dental Auxiliaries, pp. 79-81, C.V. Mosby Company, Saint Louis, 1974.
17. Wuehrmann, A.H., and Manson-Hing, L.R., Dental Radiology, p. 149, C.V. Mosby Company, Saint Louis, 5<sup>th</sup> ed., 1981.
18. Manson-Hing, L.R., Fundamental of Dental Radiography, pp. 1-206, Lea & Febiger, Philadelphia, 1979.
19. Clark, Clark's Positioning in Radiography, pp. 282-283, 290-291, Ilford, London, 10<sup>th</sup> ed., 1979.
20. Smith, N.J.D., Dental Radiography, pp. 102-110, 116-121, Blackwell Scientific Publication, London, 1980.
21. Mason, R.A., A Guide To Dental Radiography, pp. 115-129, Wright. PSG, Bristol, 2<sup>nd</sup> ed., 1982.
22. Strang, R.H.W., and Thompson, W.M., A Text book of Orthodontic, pp. 111-115, Lea & Febiger, Philadelphia, 1958.
23. Poyton, H.G., and Blackman, S., A Manual of Dental and Oral Radiography, pp. 118-124. John Wright & Sons LTD., Bristol, 1963.

24. Salzman, J.A., Practice of Orthodontic, Vol 1, pp. 464-517, J.B. Lippincott Company, Philadelphia, 1966.
25. Langland, O.E., and Sippy, F.H., Manual of Dental Radiography, pp. 21-22, 74-84, Division of Dental Radiology College of Dentistry, The University of Iowa, Iowa City, 1969.
26. Hunter, W.S., "Analysis of the Craniofacial Skeleton," Handbook of Orthodontics for the Student and General Practitioner, pp. 387-407, Yearbook Medical Publishers Incorporated, Chicago, 3<sup>th</sup> ed., 1973.
27. Langland, O.E., Textbook of Dental Radiography, pp. 261-263, Charles C. Thomas Publisher, Springfield, 1973.
28. Barr, J.H., and Stephen, R.G., Dental Radiology, pp. 200-202, W.B. Saunder Company, Philadelphia, 1980.
29. อนงค์นาฏ ภัคศิณรงค์, "Cephalometric Radiography," เอกสารประกอบการบรรยายวิชาการรังสีวิทยา ของนิสิตปริญญาโท ภาควิชารังสีวิทยา คณะทันตแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย, 2527
30. Ricketts, R.M., Roth, R.H., Chaconas, S.J., Schulhof, R.J., and Engel, G.A., Orthodontic Diagnosis and Planning, Vol. 1., pp. 20-24, Rocky Mountain/Orthodontics, United States, 1982.
31. \_\_\_\_\_, and Engel, G.A., Orthodontic Diagnosis and Planning, Vol. 2, pp. 283-288, 309-313, 385-398, Rocky Mountain/Orthodontics, United State, 1982.
32. ใจนุช จงรักษ์, ทันตรังสีวิทยาพื้นฐาน, 19-21. ท่างทูนส่วนจำกัดภาพพิมพ์, กรุงเทพมหานคร, ครั้งที่ 1, 2525.
33. Salzman, J.A., Orthodontics in Daily Practice, pp. 176-216, J.B. Lippincott Co., Philadelphia, 1974.

34. Thurow, R.C., Atlas of Orthodontics Principles, pp. 248-259, C.V. Mosby Company, Saint Louis, 2<sup>nd</sup> ed., 1977.
35. Krogman, W.M. and Sassouni, V.O., A Syllabus in Roentgenographic Cephalometry., Philadelphia Growth Center for Research in Child Growth, Philadelphia, Pennsylvania, 1957.
36. Mulick, J.F., "An investigation of craniofacial asymmetry using the serial twin-study method," A.J.O., 51 (2), 112-129, 1965.
37. Vogel, C.J., "Correction of frontal dimensions from head X-ray," A.O., 37, 1-8, 1967.
38. Bergersen, E.O., "Enlargement and Distortion in Cephalometric Radiography: Compensation Tables for linear Measurements," A.O., 50 (3), 230-244, 1980.
39. Sassouni, V., "Diagnosis and Treatment Planning via Roentgenographic Cephalometry," A.J.O., 44 (6), 433-463, 1958.
40. \_\_\_\_\_, and Forrest, E.J., "Diagnosis and Treatment Plan," Orthodontic in Dental Practice, pp. 323-354, C.V. Mosby Company, Saint Louis, 1971.
41. Adams, R.P., and Tocchini, J., "Cephalometrics and Orthopedic Diagnosis," Orthopedic Gnathology (Hockel, J.L., and Creek, W., eds.), pp. 97-98, Quintessence Publishing Company, Chicago, 1983.
42. วัลนะ ขจรราชัย และ สมรศรี วิถีพร, "Postero-anterior Radiograph," เอกสารประกอบการบรรยายวิชาทันตกรรมจัดฟัน ของนิสิตปริญญาโท ภาควิชาทันตกรรมจัดฟัน คณะทันตแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย, 2527.
43. Nanda, S.K., "Clinical Application of the Cephalometric Analysis," The Developmental Basis of Occlusion and Malocclusion, pp. 309-317, Quintessence Publishing Company, Chicago, 1983.

44. Thompson, J.R., "Asymmetry of the Face," J.A.D.A., 30, 1959-1971, 1943.
45. Harvold, E.P., "Cleft lip and palate: Morphological studies of the facial skeleton," A.J.O., 40, 493-506, 1954.
46. Cheney, E.A., "Dentofacial Asymmetries and their Clinical Significance," A.J.O., 47 (11), 814-829, 1961.
47. Letzer, G.M., and Kronman, J.H., "A Postero-anterior Cephalometric Evaluation of Craniofacial Asymmetry," A.O., 37, 205-211, 1967.
48. Vig, P.S., and Hewitt, A.B., "Asymmetry of the Human Facial Skeleton," A.O., 45 (2), 125-129, 1975.
49. Shah, S.M., and Joshi, M.R., "An Assessment of Asymmetry in the Normal Craniofacial Complex," A.O., 48, 141-148, 1978.
50. Stabrun, A.E., "Mandibular Morphology and Position in Juvenile Rheumatoid Arthritis. A Study on Postero-anterior Radiographs," European Journal of Orthodontics, 7, 288-298, 1985.
51. Scott, J.H., "The Growth in Width of the Facial Skeleton," A.J.O., 43, 336-371, 1957.
52. Savara, B.S., "The Role of Computers in Dentofacial Research and the Development of Diagnostic Aids," A.J.O., 61, 231-245, 1972.
53. Graber, T.M., Orthodontic Principles and Practice, pp.51-77, W.B. Saunder Company, Philadelphia, 3<sup>rd</sup> ed., 1972.
54. Goldstein, M.S., "Growth of the Head in the Same Individuals," Amer J. Phys Anthropol., 23, 491, 1938.
55. Krogman, W.M., "The Problem of "Timing" in Facial Growth, with Special Reference to the Period of the Changing Dentition," A.J.O., 37, 258-276, 1951.

56. Woods, G.A., "Changes in Width Dimensions Between Certain Teeth and Facial Points during Human Growth," A.J.O., 36, 666-700, 1950.
57. Meredith, H.V., and Highley, L.B., "Relationships Between Dental Arch Widths and Widths of the Face and Head," A.J.O., 37, 193-204, 1951.
58. Barrow, G.V. and White, J.R., "Developmental Change of the Maxillary and Mandibular Dental Arch," A.O., 22, 41-46, 1957.
59. Warren, E.B., "A Study of Correlation of Denture and Skeletal Widths," A.J.O., 46 (10), 789-790, 1960.
60. Haspel, L.S., "A Study of Arch Width Obtained From Postero-anterior Cephalograms and Plaster Casts," A.J.O., 48 (5), 394-395, 1962.
61. Wei, S.H.Y., "Craniofacial Width," A.O., 40 (2), 141-147, 1970.
62. Andria, L.M., and Dias, J.C., "Relation of Maxillary and Mandibular Intercuspid Width to Bizygomatic and Bigonial Width," A.O., 48 (2), 154-162, 1978.
63. El-Mangoury, N.H., Shasheen, S.I., and Mostafa, Y.A., "Landmark Identification in Computerized Posteroanterior Cephalometrics," A.J.O., 91 (1), 1987.
64. Gardiner, J.H., "An Orthodontic Survey of Libyan School-children," B.J.O., 9, 59-61, 1982.
65. Ballard, M.L., "Asymmetry in Tooth Size: A Factor in Etiology, Diagnosis and Treatment of Malocclusion," A.O., 14, 67-71, 1944.

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ANALYSIS OF VARIANCE

1. SA SKELETAL AGE

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF <sup>*</sup> OF F
MAIN EFFECTS	705691.594	9	78410.177	1509.517	0.0
SEX	2906.032	1	2906.032	55.946	0.000
AGE	702785.562	8	87848.195	1691.214	0.0
2-WAY INTERACTIONS	10729.429	8	1341.179	25.820	0.000
SEX     AGE	10 729.429	8	1341.179	25.820	0.000
EXPLAINED	716421.023	17	42142.413	811.307	0.0
RESIDUAL	27114.704	522	51.944		
TOTAL	743535.727	539	1379.473		

P = 0.05



## 2. MRL Molar Relation (Left)

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	48.032	9	5.337	11.744	0.000
SEX	5.007	1	5.007	11.047	0.001
AGE	43.025	8	5.378	11.865	0.000
2-WAY INTERACTIONS	6.034	8	0.754	1.664	0.104
SEX    AGE	6.034	8	0.754	1.664	0.104
EXPLAINED	54.067	17	3.180	7.016	0.000
RESIDUAL	236.617	522	0.0453		
TOTAL	290.683	539	0.539		

P = 0.05

## 3. MRR Molar Relation (Right)

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	40.304	9	4.478	9.911	0.000
SEX	5.912	1	5.912	13.083	0.000
AGE	34.393	8	4.299	9.515	0.000
2-WAY INTERACTIONS	5.743	8	0.718	1.589	0.125
SEX    AGE	5.743	8	0.718	1.589	0.125
EXPLAINED	46.047	17	2.709	5.995	0.000
RESIDUAL	235.858	522	0.452		
TOTAL	281.905	539	0.523		

P = 0.05

## 4. IMW INTERMOLAR WIDTH

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	496.792	9	55.199	14.474	0.000
SEX	406.467	1	406.467	106.579	0.000
AGE	90.325	8	11.291	2.960	0.003
2-WAY INTERACTIONS	69.329	8	8.666	2.272	0.021
SEX    AGE	69.329	8	8.666	2.272	0.021
EXPLAINED	566.121	17	33.301	8.732	0.000
RESIDUAL	1990.792	522	3.814		
TOTAL	2556.912	539	4.744		

P = 0.05

## 5. DML DENTURE MIDLINE

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	4.615	9	0.513	1.918	0.047
SEX	0.017	1	0.017	0.062	0.803
AGE	4.598	8	0.575	2.149	0.030
2-WAY INTERACTIONS	1.050	8	0.131	0.491	0.863
SEX    AGE	1.050	8	0.131	0.401	0.863
EXPLAINED	5.665	17	0.333	1.246	0.224
RESIDUAL	139.583	522	0.267		
TOTAL	145.248	539	0.269		

P = 0.05

## 6. MMWL MAXILLO-MANDIBULAR WIDTH (LEFT)

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	240.987	9	26.776	17.191	0.000
SEX	0.017	1	0.017	0.011	0.918
AGE	140.970	8	30.121	19.339	0.000
2-WAY INTERACTIONS	16.833	8	2.104	1.351	0.216
SEX AGE	16.833	8	2.104	1.351	0.216
EXPLAINED	257.820	17	15.166	9.737	0.000
RESIDUAL	813.033	522	1.558		
TOTAL	1070.854	530	1.987		

P = 0.05

## 7. MMWR MAXILLO-MANDIBULAR WIDTH (RIGHT)

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	275.838	9	30.649	18.020	0.000
SEX	0.030	1	0.030	0.017	0.895
AGE	275.808	8	34.476	20.270	0.000
2-WAY INTERACTIONS	15.679	8	1.960	1.152	0.327
SEX AGE	15.679	8	1.960	1.152	0.327
EXPLAINED	291.517	17	17.148	10.082	0.000
RESIDUAL	887.833	522	1.701		
TOTAL	1179.350	539	2.188		

P = 0.05

## 8. MJL MOLAR TO JAW (LEFT)

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup>
	SQUARES	DF	SQUARE	F	OF F
MAIN EFFECTS	887.466	9	98.605	52.796	0.000
SEX	6.556	1	6.556	3.510	0.062
AGE	880.890	8	110.111	58.956	0.000
2-WAY INTERACTIONS	24.823	8	3.103	1.661	0.105
SEX    AGE	24.823	8	3.103	1.661	0.105
EXPLAINED	912.269	17	53.663	28.732	0.000
RESIDUAL	974.925	522	1.868		
TOTAL	1887.194	539	3.501		

P = 0.05

## 9. MJR MOLAR TO JAW (RIGHT)

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup>
	SQUARES	DF	SQUARE	F	OF F
MAIN EFFECTS	178.705	9	79.856	44.386	0.000
SEX	3.113	1	3.113	1.730	0.189
AGE	715.592	8	89.449	49.718	0.000
2-WAY INTERACTIONS	32.479	8	4.060	2.257	0.022
SEX    AGE	32.479	8	4.060	2.257	0.022
EXPLAINED	751.183	17	44.187	24.560	0.000
RESIDUAL	939.150	522	1.799		
TOTAL	1690.333	539	3.136		

P = 0.05

## 10. DJM DENTURE TO JAW MIDLINE

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	2.664	9	0.296	0.998	0.441
SEX	0.741	1	0.741	2.498	0.115
AGE	1.923	8	0.240	0.811	0.593
2-WAY INTERACTIONS	1.401	8	0.175	0.590	0.786
SEX    AGE	1.401	8	0.175	0.590	0.786
EXPLAINED	4.065	17	0.239	0.806	0.687
RESIDUAL	154.817	522	0.297		
TOTAL	158.881	539	0.295		

P = 0.05

## 11. OPT OCCLUSAL PLANE TILT

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	6.912	9	0.768	1.655	0.097
SEX	0.134	1	0.134	0.288	0.592
AGE	6.779	8	0.847	1.825	0.070
2-WAY INTERACTIONS	4.362	8	0.545	1.175	0.312
SEX    AGE	4.362	8	0.545	1.175	0.312
EXPLAINED	11.275	17	0.663	1.429	0.117
RESIDUAL	242.308	522	0.464		
TOTAL	253.583	539	0.470		

P = 0.05

## 12. NSH NASAL HEIGHT

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN		SIGNIF <sup>*</sup> OF F
			SQUARE	F	
MAIN EFFECTS	2792.862	9	310.318	92.234	0.0
SEX	17.604	1	17.604	5.232	0.023
AGE	2775.258	8	346.907	103.110	0.0
2-WAY INTERACTIONS	112.642	8	14.080	4.185	0.000
SEX    AGE	112.642	8	14.080	4.185	0.000
EXPLAINED	2905.504	17	170.912	50.799	0.0
RESIDUAL	1756.242	522	3.364		
TOTAL	4661.746	539	8.649		

P = 0.05

## 13. NSW NASAL WIDTH

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN		SIGNIF <sup>*</sup> OF F
			SQUARE	F	
MAIN EFFECTS	1310.993	9	145.666	82.422	0.0
SEX	47.112	1	47.112	26.657	0.000
AGE	1263.881	8	157.985	89.392	0.0
2-WAY INTERACTIONS	43.526	8	5.441	3.079	0.002
SEX    AGE	43.526	8	5.441	3.079	0.002
EXPLAINED	1354.519	17	79.678	45.084	0.0
RESIDUAL	922.542	522	1.767		
TOTAL	2277.061	539	4.225		

P = 0.05

## 14. MXW MAXILLARY WIDTH

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	2619.613	9	291.068	44.476	0.000
SEX	818.443	1	818.443	125.060	0.000
AGE	1801.171	8	225.146	34.403	0.000
2-WAY INTERACTIONS	164.835	8	20.604	3.148	0.002
SEX    AGE	164.835	8	20.604	3.148	0.002
EXPLAINED	2784.448	17	163.791	25.028	0.000
RESIDUAL	3416.182	522	6.544		
TOTAL	6200.630	539	11.504		

P = 0.05

## 15. MDW MANDIBULAR WIDTH

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	7333.207	9	814.801	59.006	0.000
SEX	664.003	1	664.003	48.086	0.000
AGE	6669.204	8	833.650	60.371	0.000
2-WAY INTERACTIONS	426.208	8	53.276	3.858	0.000
SEX    AGE	426.208	8	53.276	3.858	0.000
EXPLAINED	7759.415	17	456.436	33.354	0.000
RESIDUAL	7208.165	522	13.809		
TOTAL	14967.580	539	27.749		

P = 0.05

## 16. FCW FACIAL WIDTH

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup>
	SQUARES	DF	SQUARE	F	OF F
MAIN EFFECTS	19731.250	9	2192.361	124.408	0.0
SEX	2308.467	1	2308.467	130.997	0.000
AGE	17422.783	8	2177.848	123.585	0.0
2-WAY INTERACTIONS	791.954	8	98.994	5.618	0.000
SEX    AGE	791.954	8	98.994	5.618	0.000
EXPLAINED	20523.204	17	1207.247	68.507	0.0
RESIDUAL	9198.842	522	17.622		
TOTAL	29722.046	539	55.143		

P = 0.05

## 17. MMM MAXILLO-MANDIBULAR MIDLINE

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup>
	SQUARES	DF	SQUARE	F	OF F
MAIN EFFECTS	11.471	9	1.275	2.059	0.032
SEX	0.363	1	0.363	0.586	0.444
AGE	11.108	8	1.389	2.243	0.023
2-WAY INTERACTIONS	3.095	8	0.387	0.625	0.757
SEX    AGE	3.095	8	0.387	0.625	0.757
EXPLAINED	14.567	17	0.857	1.384	0.138
RESIDUAL	323.167	522	0.619		
TOTAL	337.733	539	0.627		

P = 0.05



## 18. PS POSTURAL SYMMETRY

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	7.552	9	0.839	1.643	0.100
SEX	0.535	1	0.535	1.048	0.306
AGE	7.017	8	0.877	1.718	0.092
2-WAY INTERACTIONS	3.315	8	0.414	0.811	0.593
SEX    AGE	3.315	8	0.414	0.811	0.593
EXPLAINED	10.867	17	0.639	1.252	0.219
RESIDUAL	266.567	522	0.511		
TOTAL	277.433	539	0.515		

P = 0.05

## 19. NSP NASAL PROPORTION

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	132.031	9	14.670	2.070	0.031
SEX	51.956	1	51.956	7.331	0.007
AGE	80.075	8	10.009	1.412	0.188
2-WAY INTERACTIONS	25.906	8	3.238	0.457	0.886
SEX    AGE	25.906	8	3.230	0.457	0.886
EXPLAINED	157.937	17	9.290	1.311	0.180
RESIDUAL	3699.608	522	7.087		
TOTAL	3857.546	539	7.157		

P = 0.05

## 20. MXP MAXILLA PROPORTION

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	1501.625	9	166.847	18.316	0.000
SEX	199.837	1	199.837	21.937	0.000
AGE	1301.787	8	162.723	17.863	0.000
2-WAY INTERACTIONS	114.833	8	14.354	1.576	0.129
SEX    AGE	114.833	8	14.354	1.576	0.129
EXPLAINED	1616.458	17	95.086	10.438	0.000
RESIDUAL	4755.125	522	9.109		
TOTAL	6371.583	539	11.821		

P = 0.05

## 21. MDP MANDIBLE PROPORTION

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	1486.591	9	165.177	13.828	0.000
SEX	113.437	1	113.437	9.496	0.002
AGE	1373.154	8	171.644	14.369	0.000
2-WAY INTERACTIONS	115.683	8	14.460	1.211	0.290
SEX    AGE	115.683	8	14.460	1.211	0.290
EXPLAINED	1602.275	17	94.251	7.890	0.000
RESIDUAL	6235.475	522	11.945		
TOTAL	7837.750	539	14.541		

P = 0.05

## 22. FCP FACIAL PROPORTION

SOURCE OF VARIATION	SUM OF		MEAN		SIGNIF <sup>*</sup> OF F
	SQUARES	DF	SQUARE	F	
MAIN EFFECTS	357.506	9	39.723	6.281	0.000
SEX	56.713	1	56.713	8.967	0.003
AGE	300.793	8	37.599	5.945	0.000
2-WAY INTERACTIONS	150.254	8	18.782	2.970	0.003
SEX    AGE	150.254	8	18.782	2.970	0.003
EXPLAINED	507.759	17	29.868	4.723	0.000
RESIDUAL	3301.350	522	6.324		
TOTAL	2809.109	539	7.067		

P = 0.05



## ประวัติผู้เขียน

นางสาว ไศภิชร์สุดา สัตตะบุษย์ เกิดเมื่อวันที่ 3 ตุลาคม 2501 ที่กรุงเทพมหานคร สำเร็จการศึกษาทันตแพทยศาสตรบัณฑิต เกียรตินิยมอันดับ 2 จากคณะทันตแพทยศาสตร์ มหาวิทยาลัยมหิดล พ.ศ. 2525 และเคยเข้ารับราชการที่คณะทันตแพทยศาสตร์ มหาวิทยาลัยขอนแก่น พ.ศ. 2526 ได้เข้าศึกษาต่อในสาขาวิชาทันตกรรมจัดฟัน ภาควิชาทันตกรรมจัดฟัน บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย พ.ศ. 2527