Appendix 1

Summary Table of the Root Numbers of the Permanent Maxillary Teeth

Blaine Cleghorn, and William Christie

See Appendix 4 for a list of references.

Permanent Maxillary Teeth - Number of Roots

	NUMBER OF ROOTS						No. of Studies	References	No. of Teeth	Most Common Anomaly or Variation (Number of Case Reports in Brackets)
	Most Common	1	2	3	4	Other				
Central incisors	1 Root	100%					7	Rahimi, S et al 2009 (1), Weng, X-L et al 2009 (2), Sert, S and Bayirli, GS 2004 (3), Çaliskan, MK et al 1995 (4), Vertucci, F 1984 (5), Pineda, F and Kuttler, Y 1972 (6), Barrett, MT 1925 (7)	892	Dens evaginatus (17) 2 roots and 2 canals (14) 1 root and 2 canals (10) Fusion (9) Dens invaginatus (7)
Lateral incisors	1 Root	100%					7	Weng, X-L et al 2009 (2), Sert, S and Bayirli, GS 2004 (3), Çaliskan, MK et al 1995 (4), Vertucci, F 1984 (5), Bjorndal, AM and Skidmore, AE 1983 (8), Pineda, F and Kuttler, Y 1972 (6), Barrett MT 1925 (7)	827	Dens invaginatus (58) Palatogingival groove (20) Dens evaginatus (talon cusp) (17) 2 roots and 2 canals (10) 1 root and 2 canals (10)
Canines	1 Root	100%					7	Weng, X-L et al 2009 (2), Sert, S and Bayirli, GS 2004 (3), Çaliskan, MK et al 1995 (4), Vertucci, F 1984 (5), Bjorndal, AM and Skidmore, AE 1983 (8), Pineda, F and Kuttler, Y 1972 (6), Barrett MT 1925 (7)	842	Dens invaginatus (7) 1 root and 2 canals (2) Dens evaginatus (talon cusp) (2) 2 roots (2)

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	NUMBER OF ROOTS						No. of Studies	References	No. of Teeth	Most Common Anomaly or Variation (Number of Case Reports in Brackets)
	Most Common	1	2	3	4	Other				
First premolar										3 roots and 3 canals (26)
Caucasian & others (excluding Asian & NA Native)*	2 Roots	37.7%	56.7%	1.9%		3.7%	17	Bürklein, S et al (2017) (9), Abella, F et al 2015 (10), Bulut, DG et al 2015 (11), Gupta, S et al (2015) (12), Dababneh, R and Rodan, R 2013 (13), Ng'ang'a, RN et al 2010 (14), Atieh, MA 2008 (15), Awawdeh, L et al 2008 (16), Chaparro, AJ et al 1999 (17), Kartal, N et al 1998 (18), Zaatar, El et al 1997 (19), Pecora, JD et al 1992 (20), Vertucci, FJ and Gegauff, A 1979 (21), Carns, EJ and Skidmore, AE 1973 (22), Green, D 1973 (23), Mueller, AH 1933 (24), Barrett MT 1925 (7)	4482	Furcation groove (palatal of B root) (3) Dens evaginatus (2)
Asian & NA Native	**1 Root**	**61.8%**	**37.6%**	**0.6%**			**5**	Tian, Y-Y et al 2012 (25), Cheng, XL and Weng, YL 2008 (26), Loh, HS et al 1998 (27), Aoki, K 1990 (28), Walker, RT 1987 (29)	4981	
All studies		50.4%	46.7%	1.2%		1.7%	22	Bürklein, S et al (2017) (9), Abella, F et al 2015 (10), Bulut, DG et al 2015 (11), Gupta, S et al (2015) (12), Dababneh, R and Rodan, R 2013 (13), Ng'ang'a, RN et al 2010 (14), Atieh, MA 2008 (15), Awawdeh, L et al 2008 (16), Chaparro, AJ et al 1999 (17), Kartal, N et al 1998 (18), Zaatar, El et al 1997 (19), Pecora, JD et al 1992 (20), Vertucci, FJ and Gegauff, A 1979 (21), Carns, EJ and Skidmore, AE 1973 (22), Green, D 1973 (23), Mueller, AH 1933 (24), Barrett MT 1925 (7), Tian, Y-Y et al 2012 (25), Cheng, XL and Weng, YL 2008 (26), Loh, HS et al 1998 (27), Aoki, K 1990 (28), Walker, RT 1987 (29)	9463	

	NUMBER OF ROOTS						No. of Studies	References	No. of Teeth	Most Common Anomaly or Variation (Number of Case Reports in Brackets)
	Most Common	1	2	3	4	Other				
Second premolar	1 Root	90.5%	8.9%	0.2%		0.4%	12	Elnour, M et al 2016 (30), Abella, F et al 2015 (10), Bulut, DG et al 2015 (11), Yang, L et al 2014 (31), Zaatar, EI et al 1997 (19), Pecora, JD et al 1992 (32), Sikri, VK and Sikri, P 1991 (33), Aoki, K 1990 (28), Gorlin, RJ and Goldman, HM 1970 (34), Mueller, AH 1933 (24), Barrett MT 1925 (7)	9833	3 roots and 3 canals (16) Dens evaginatus (2)
First molar	3 Roots (MB, DB and Li)*	1.8%	2.2%	95.5%	0.2%	1.4%	20	Ghobashy, AM et al 2017 (35), Khademi, A et al 2017 (36), Martins, JN et al 2016 (37), Naseri, M et al 2016 (38), Tian, X-M et al 2016 (39), Alrahabi, M and Zafar, MS 2015 (40), Nikoloudaki GE et al 2015 (41), Singh, S and Pawar, M 2015 (42), Bhuyan, AC et al 2014 (43), Guo, J et al 2014 (44), Rouhani, A et al 2014 (45), Silva, EJ et al 2014 (46), Plotino, G et al 2013 (47), Zhang, R et al 2011 (48), Zheng, Q-H et al 2010 (49), Pattanshetti, N et al 2008 (50), Rwenyonyi, CM et al 2007 (51), al Shalabi, RM et al 2000 (52), Thomas, RP, Moule, AJ and Bryant, R 1993 (53), Gray, R 1983 (54), Barrett, MT 1925 (7)	7237	3 roots (MB, DB and Palatal) and 4-5 canals (1-2 MB, DB and 2 Palatal) (26) 3 roots (MB, DB and Palatal) and 5 canals (2MB, 2DB and Palatal) (12) Taurodontism (10) Fused roots and C-shaped canal (10) 4 roots (MB, DB and 2 Palatal) and 4 canals (MB, DB and 2 Palatal) (9)

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	NUMBER OF ROOTS						No. of Studies	References	No. of Teeth	Most Common Anomaly or Variation (Number of Case Reports in Brackets)
	Most Common	1	2	3	4	Other				
Second molar	3 Roots (MB, DB and Li)	5.9%	9.1%	77.6%	0.8%		17	Ghobashy, AM et al 2017 (35), Khademi, A et al 2017 (36), Martins, JN et al 2016 (37), Tian, X-M et al 2016 (39), Nikoloudaki GE et al 2015 (41), Singh, S and Pawar, M 2015 (42), Zhang, Q et al 2014 (55), Rouhani, A et al 2014 (45), Silva, EJ et al 2014 (46), Plotino, G et al 2013 (47), Kim, Y et al 2012 (56), Zhang, R et al 2011 (48), Rwenyonyi, CM et al 2007 (51), al Shalabi, RM et al 2000 (52), Libfeld, H and Rotstein, I 1989 (57), Barrett, MT 1925 (7)	6699	4 roots (MB, DB and 2 Palatal) and 4 canals (MB, DB and 2 Palatal) (57) 3 roots and 4 canals (MB, DB and 2 Palatal canals) (7) 3 roots and 5 canals (3 MB, DB and Palatal canals) (3)
Third molar	3 Roots (MB, DB and Li)	31.2%	24.1%	42.4%	2.2%	0.1%	8	Tomaszewska, IM et al 2017 (58), Rawtiya, M et al 2016 (59), Singh, S and Pawar, M 2015 (42), Sert, S et al 2011 (60), Alavi, AM 2002 (61), Sidow, SJ et al 2000 (62), Guerisoli, DM et al 1998 (63), Barrett, MT 1925 (7)	1072	4 roots (3) C-shaped canal (1)

*NA Native = North American Native

*MB = mesiobuccal, DB = distobuccal and Li = lingual.