# Supplements

## Supplement 1 – Examiner forms



A screenshot of unfilled Excel form that examiners used to record the diagnoses. Participants would first record the case number in A1 cell, then start reviewing the case tooth-by-tooth, and put any marks in the cells corresponding to tooth-condition diagnosis they consider to be present. All unfilled cells were considered as negative diagnosis, all filled cells as positive.

Participants underwent comprehensive training and examination to ensure they are able to comfortably use and fill the forms.

## Supplement 2 – Sensitivity and Specificity values for examiners and the device

| **condition** | **participant** | **tn** | **tp** | **fn** | **fp** | **sensitivity** | **specificity** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Artificial crown | device | 8847 | 442 | 21 | 33 | 0.9546 (0.9359 - 0.9681) | 0.9963 (0.9951 - 0.9972) |
| DMFR-1 | 6298 | 336 | 10 | 12 | 0.9711 (0.9522 - 0.9826) | 0.9981 (0.997 - 0.9988) |
| DMFR-2 | 7105 | 342 | 14 | 27 | 0.9607 (0.94 - 0.9744) | 0.9962 (0.9948 - 0.9972) |
| DMFR-3 | 7385 | 376 | 27 | 20 | 0.933 (0.9095 - 0.9507) | 0.9973 (0.9961 - 0.9981) |
| DMFR-4 | 5924 | 302 | 9 | 5 | 0.9711 (0.9509 - 0.9831) | 0.9992 (0.9983 - 0.9996) |
| Canals N=1 | device | 4907 | 4206 | 58 | 172 | 0.9864 (0.9832 - 0.989) | 0.9661 (0.9617 - 0.9701) |
| DMFR-1 | 3562 | 3017 | 35 | 42 | 0.9885 (0.9849 - 0.9913) | 0.9883 (0.985 - 0.9909) |
| DMFR-2 | 4025 | 3330 | 104 | 29 | 0.9697 (0.9645 - 0.9742) | 0.9928 (0.9903 - 0.9947) |
| DMFR-3 | 4185 | 3491 | 85 | 47 | 0.9762 (0.9717 - 0.9801) | 0.9889 (0.9859 - 0.9912) |
| DMFR-4 | 3378 | 2776 | 34 | 52 | 0.9879 (0.984 - 0.9909) | 0.9848 (0.981 - 0.9879) |
| Canals N=2 | device | 8194 | 845 | 244 | 60 | 0.7759 (0.7545 - 0.796) | 0.9927 (0.991 - 0.9941) |
| DMFR-1 | 5864 | 697 | 66 | 29 | 0.9135 (0.8953 - 0.9288) | 0.9951 (0.9933 - 0.9964) |
| DMFR-2 | 6450 | 870 | 35 | 133 | 0.9613 (0.9493 - 0.9706) | 0.9798 (0.9767 - 0.9825) |
| DMFR-3 | 6800 | 871 | 57 | 80 | 0.9386 (0.9243 - 0.9503) | 0.9884 (0.986 - 0.9903) |
| DMFR-4 | 5500 | 632 | 61 | 47 | 0.912 (0.8926 - 0.9281) | 0.9915 (0.9892 - 0.9933) |
| Canals N=3 | device | 7656 | 1341 | 66 | 280 | 0.9531 (0.9429 - 0.9615) | 0.9647 (0.9611 - 0.968) |
| DMFR-1 | 5604 | 930 | 69 | 53 | 0.9309 (0.9165 - 0.943) | 0.9906 (0.9883 - 0.9925) |
| DMFR-2 | 6274 | 1042 | 102 | 70 | 0.9108 (0.896 - 0.9237) | 0.989 (0.9866 - 0.9909) |
| DMFR-3 | 6548 | 1114 | 81 | 65 | 0.9322 (0.9193 - 0.9432) | 0.9902 (0.988 - 0.992) |
| DMFR-4 | 5260 | 861 | 56 | 63 | 0.9389 (0.9246 - 0.9507) | 0.9882 (0.9855 - 0.9904) |
| Canals N=4 | device | 8933 | 240 | 127 | 43 | 0.654 (0.6121 - 0.6935) | 0.9952 (0.9939 - 0.9963) |
| DMFR-1 | 6298 | 283 | 20 | 55 | 0.934 (0.9065 - 0.9538) | 0.9913 (0.9892 - 0.9931) |
| DMFR-2 | 7145 | 255 | 50 | 38 | 0.8361 (0.7983 - 0.868) | 0.9947 (0.9931 - 0.9959) |
| DMFR-3 | 7429 | 288 | 28 | 63 | 0.9114 (0.8815 - 0.9343) | 0.9916 (0.9897 - 0.9932) |
| DMFR-4 | 6049 | 147 | 41 | 3 | 0.7819 (0.7286 - 0.8273) | 0.9995 (0.9988 - 0.9998) |
| Canals N=5 | device | 9341 | 0 | 0 | 2 |  | 0.9998 (0.9994 - 0.9999) |
| DMFR-1 | 6656 | 0 | 0 | 0 |  | 1.0 (0.9996 - 1.0) |
| DMFR-2 | 7488 | 0 | 0 | 0 |  | 1.0 (0.9996 - 1.0) |
| DMFR-3 | 7808 | 0 | 0 | 0 |  | 1.0 (0.9997 - 1.0) |
| DMFR-4 | 6240 | 0 | 0 | 0 |  | 1.0 (0.9996 - 1.0) |
| Caries signs | device | 8940 | 263 | 98 | 42 | 0.7285 (0.6884 - 0.7652) | 0.9953 (0.994 - 0.9964) |
| DMFR-1 | 6376 | 222 | 20 | 38 | 0.9174 (0.8834 - 0.9421) | 0.9941 (0.9923 - 0.9955) |
| DMFR-2 | 7066 | 250 | 66 | 106 | 0.7911 (0.7511 - 0.8262) | 0.9852 (0.9827 - 0.9874) |
| DMFR-3 | 7254 | 277 | 19 | 258 | 0.9358 (0.9082 - 0.9555) | 0.9657 (0.962 - 0.9689) |
| DMFR-4 | 5958 | 201 | 36 | 45 | 0.8481 (0.8058 - 0.8825) | 0.9925 (0.9904 - 0.9941) |
| Crown defect over 50pct | device | 9241 | 69 | 10 | 23 | 0.8734 (0.7993 - 0.9228) | 0.9975 (0.9965 - 0.9982) |
| DMFR-1 | 6593 | 54 | 2 | 7 | 0.9643 (0.8977 - 0.9881) | 0.9989 (0.998 - 0.9994) |
| DMFR-2 | 7418 | 51 | 10 | 9 | 0.8361 (0.7442 - 0.8994) | 0.9988 (0.9979 - 0.9993) |
| DMFR-3 | 7721 | 63 | 4 | 20 | 0.9403 (0.8735 - 0.9729) | 0.9974 (0.9963 - 0.9982) |
| DMFR-4 | 6178 | 49 | 10 | 3 | 0.8305 (0.7361 - 0.8959) | 0.9995 (0.9988 - 0.9998) |
| Endodontically treated tooth | device | 8348 | 925 | 31 | 39 | 0.9676 (0.9568 - 0.9758) | 0.9953 (0.994 - 0.9964) |
| DMFR-1 | 5919 | 720 | 11 | 6 | 0.985 (0.9756 - 0.9908) | 0.999 (0.998 - 0.9995) |
| DMFR-2 | 6678 | 783 | 8 | 19 | 0.9899 (0.9821 - 0.9943) | 0.9972 (0.9959 - 0.998) |
| DMFR-3 | 7023 | 750 | 16 | 19 | 0.9791 (0.9688 - 0.9861) | 0.9973 (0.9961 - 0.9981) |
| DMFR-4 | 5621 | 594 | 20 | 5 | 0.9674 (0.9534 - 0.9773) | 0.9991 (0.9982 - 0.9996) |
| Filling | device | 6991 | 2232 | 64 | 56 | 0.9721 (0.9659 - 0.9772) | 0.9921 (0.9901 - 0.9936) |
| DMFR-1 | 4915 | 1694 | 26 | 21 | 0.9849 (0.9792 - 0.989) | 0.9957 (0.9939 - 0.997) |
| DMFR-2 | 5586 | 1766 | 54 | 82 | 0.9703 (0.9631 - 0.9762) | 0.9855 (0.9827 - 0.9879) |
| DMFR-3 | 5839 | 1884 | 46 | 39 | 0.9762 (0.9698 - 0.9812) | 0.9934 (0.9914 - 0.9949) |
| DMFR-4 | 4762 | 1425 | 37 | 16 | 0.9747 (0.967 - 0.9806) | 0.9967 (0.995 - 0.9978) |
| Impaction | device | 9199 | 127 | 12 | 5 | 0.9137 (0.8662 - 0.9454) | 0.9995 (0.9989 - 0.9997) |
| DMFR-1 | 6556 | 93 | 4 | 3 | 0.9588 (0.9113 - 0.9814) | 0.9995 (0.9989 - 0.9998) |
| DMFR-2 | 7363 | 114 | 5 | 6 | 0.958 (0.9162 - 0.9794) | 0.9992 (0.9984 - 0.9996) |
| DMFR-3 | 7682 | 115 | 6 | 5 | 0.9504 (0.907 - 0.9741) | 0.9993 (0.9987 - 0.9997) |
| DMFR-4 | 6155 | 78 | 4 | 3 | 0.9512 (0.8957 - 0.9779) | 0.9995 (0.9988 - 0.9998) |
| Implant | device | 9230 | 107 | 3 | 3 | 0.9727 (0.9337 - 0.989) | 0.9997 (0.9992 - 0.9999) |
| DMFR-1 | 6568 | 85 | 1 | 2 | 0.9884 (0.9496 - 0.9974) | 0.9997 (0.9991 - 0.9999) |
| DMFR-2 | 7414 | 72 | 1 | 1 | 0.9863 (0.9409 - 0.9969) | 0.9999 (0.9994 - 1.0) |
| DMFR-3 | 7712 | 91 | 2 | 3 | 0.9785 (0.9371 - 0.9929) | 0.9996 (0.999 - 0.9998) |
| DMFR-4 | 6159 | 74 | 4 | 3 | 0.9487 (0.8906 - 0.9768) | 0.9995 (0.9988 - 0.9998) |
| Missed canal | device | 9201 | 79 | 39 | 24 | 0.6695 (0.5952 - 0.7362) | 0.9974 (0.9964 - 0.9981) |
| DMFR-1 | 6522 | 90 | 12 | 32 | 0.8824 (0.8197 - 0.9252) | 0.9951 (0.9935 - 0.9963) |
| DMFR-2 | 7376 | 77 | 25 | 10 | 0.7549 (0.6789 - 0.8178) | 0.9986 (0.9977 - 0.9992) |
| DMFR-3 | 7695 | 83 | 11 | 19 | 0.883 (0.8174 - 0.9271) | 0.9975 (0.9964 - 0.9983) |
| DMFR-4 | 6164 | 48 | 22 | 6 | 0.6857 (0.589 - 0.7686) | 0.999 (0.9981 - 0.9995) |
| Missing | device | 7287 | 1567 | 28 | 461 | 0.9824 (0.9762 - 0.9871) | 0.9405 (0.9359 - 0.9448) |
| DMFR-1 | 5445 | 966 | 151 | 94 | 0.8648 (0.8471 - 0.8808) | 0.983 (0.9799 - 0.9857) |
| DMFR-2 | 6202 | 1178 | 35 | 73 | 0.9711 (0.9621 - 0.9781) | 0.9884 (0.9859 - 0.9904) |
| DMFR-3 | 6391 | 1244 | 60 | 113 | 0.954 (0.9435 - 0.9626) | 0.9826 (0.9798 - 0.9851) |
| DMFR-4 | 4933 | 1122 | 52 | 133 | 0.9557 (0.9447 - 0.9646) | 0.9737 (0.9698 - 0.9772) |
| Overfilling | device | 9129 | 148 | 41 | 25 | 0.7831 (0.7299 - 0.8282) | 0.9973 (0.9962 - 0.998) |
| DMFR-1 | 6505 | 124 | 17 | 10 | 0.8794 (0.827 - 0.9175) | 0.9985 (0.9974 - 0.9991) |
| DMFR-2 | 7313 | 153 | 5 | 17 | 0.9684 (0.9364 - 0.9845) | 0.9977 (0.9966 - 0.9984) |
| DMFR-3 | 7630 | 158 | 8 | 12 | 0.9518 (0.9165 - 0.9726) | 0.9984 (0.9975 - 0.999) |
| DMFR-4 | 6121 | 94 | 16 | 9 | 0.8545 (0.7908 - 0.9013) | 0.9985 (0.9975 - 0.9991) |
| PDL widening along root | device | 8937 | 248 | 34 | 124 | 0.8794 (0.8439 - 0.9078) | 0.9863 (0.9842 - 0.9882) |
| DMFR-1 | 6395 | 189 | 25 | 47 | 0.8832 (0.8422 - 0.9146) | 0.9927 (0.9907 - 0.9943) |
| DMFR-2 | 7304 | 88 | 87 | 9 | 0.5029 (0.4411 - 0.5645) | 0.9988 (0.9979 - 0.9993) |
| DMFR-3 | 7443 | 253 | 9 | 103 | 0.9656 (0.9419 - 0.9799) | 0.9864 (0.984 - 0.9884) |
| DMFR-4 | 6004 | 185 | 19 | 32 | 0.9069 (0.8679 - 0.9352) | 0.9947 (0.9929 - 0.996) |
| Periapical lesion | device | 8468 | 700 | 135 | 40 | 0.8383 (0.8163 - 0.8582) | 0.9953 (0.9939 - 0.9964) |
| DMFR-1 | 6022 | 540 | 45 | 49 | 0.9231 (0.9029 - 0.9393) | 0.9919 (0.9898 - 0.9936) |
| DMFR-2 | 6768 | 606 | 46 | 68 | 0.9294 (0.9111 - 0.9442) | 0.9901 (0.9879 - 0.9918) |
| DMFR-3 | 6966 | 659 | 47 | 136 | 0.9334 (0.9163 - 0.9473) | 0.9809 (0.978 - 0.9833) |
| DMFR-4 | 5618 | 523 | 70 | 29 | 0.882 (0.8584 - 0.902) | 0.9949 (0.993 - 0.9962) |
| Periapical lesion, PDL widening | device | 8740 | 327 | 104 | 172 | 0.7587 (0.7233 - 0.7909) | 0.9807 (0.9782 - 0.983) |
| DMFR-1 | 6307 | 218 | 59 | 72 | 0.787 (0.7439 - 0.8246) | 0.9887 (0.9863 - 0.9907) |
| DMFR-2 | 7104 | 217 | 106 | 61 | 0.6718 (0.6276 - 0.7132) | 0.9915 (0.9895 - 0.9931) |
| DMFR-3 | 7214 | 353 | 25 | 216 | 0.9339 (0.9096 - 0.952) | 0.9709 (0.9675 - 0.974) |
| DMFR-4 | 5860 | 253 | 73 | 54 | 0.7761 (0.7359 - 0.8117) | 0.9909 (0.9886 - 0.9927) |
| Periapical lesion, poorly circumscribed radiolucency | device | 9243 | 32 | 14 | 54 | 0.6957 (0.5758 - 0.7938) | 0.9942 (0.9927 - 0.9954) |
| DMFR-1 | 6599 | 30 | 3 | 24 | 0.9091 (0.7931 - 0.9631) | 0.9964 (0.9949 - 0.9974) |
| DMFR-2 | 7436 | 20 | 14 | 18 | 0.5882 (0.448 - 0.7155) | 0.9976 (0.9965 - 0.9984) |
| DMFR-3 | 7748 | 32 | 8 | 20 | 0.8 (0.6785 - 0.8835) | 0.9974 (0.9963 - 0.9982) |
| DMFR-4 | 6190 | 26 | 5 | 19 | 0.8387 (0.7038 - 0.9192) | 0.9969 (0.9956 - 0.9979) |
| Periapical lesion, radiopacity | device | 9339 | 0 | 4 | 0 | 0.0 (0.0 - 0.4035) | 1.0 (0.9997 - 1.0) |
| DMFR-1 | 6644 | 4 | 0 | 8 | 1.0 (0.5965 - 1.0) | 0.9988 (0.9979 - 0.9993) |
| DMFR-2 | 7478 | 1 | 3 | 6 | 0.25 (0.0579 - 0.6438) | 0.9992 (0.9985 - 0.9996) |
| DMFR-3 | 7800 | 2 | 1 | 5 | 0.6667 (0.2535 - 0.9217) | 0.9994 (0.9987 - 0.9997) |
| DMFR-4 | 6238 | 1 | 0 | 1 | 1.0 (0.2699 - 1.0) | 0.9998 (0.9993 - 1.0) |
| Periapical lesion, well circumscribed radiolucency | device | 9057 | 191 | 71 | 24 | 0.729 (0.6817 - 0.7717) | 0.9974 (0.9963 - 0.9981) |
| DMFR-1 | 6415 | 197 | 13 | 31 | 0.9381 (0.9048 - 0.9603) | 0.9952 (0.9936 - 0.9964) |
| DMFR-2 | 7212 | 201 | 13 | 62 | 0.9393 (0.9065 - 0.961) | 0.9915 (0.9895 - 0.9931) |
| DMFR-3 | 7579 | 184 | 29 | 16 | 0.8638 (0.8206 - 0.898) | 0.9979 (0.9968 - 0.9986) |
| DMFR-4 | 6060 | 140 | 30 | 10 | 0.8235 (0.7705 - 0.8664) | 0.9984 (0.9972 - 0.999) |
| Periodontal bone loss | device | 7664 | 1338 | 72 | 269 | 0.9489 (0.9384 - 0.9577) | 0.9661 (0.9626 - 0.9693) |
| DMFR-1 | 5464 | 906 | 137 | 149 | 0.8686 (0.8505 - 0.8849) | 0.9735 (0.9697 - 0.9768) |
| DMFR-2 | 6270 | 963 | 75 | 180 | 0.9277 (0.9134 - 0.9399) | 0.9721 (0.9685 - 0.9753) |
| DMFR-3 | 6451 | 797 | 332 | 228 | 0.7059 (0.6832 - 0.7277) | 0.9659 (0.962 - 0.9693) |
| DMFR-4 | 5052 | 907 | 135 | 146 | 0.8704 (0.8524 - 0.8866) | 0.9719 (0.9679 - 0.9754) |
| Periodontal bone loss, mild | device | 8356 | 714 | 52 | 221 | 0.9321 (0.9156 - 0.9456) | 0.9742 (0.9713 - 0.9769) |
| DMFR-1 | 5964 | 447 | 98 | 147 | 0.8202 (0.7916 - 0.8456) | 0.9759 (0.9725 - 0.979) |
| DMFR-2 | 6757 | 537 | 64 | 130 | 0.8935 (0.871 - 0.9125) | 0.9811 (0.9782 - 0.9836) |
| DMFR-3 | 7008 | 418 | 213 | 169 | 0.6624 (0.6308 - 0.6927) | 0.9765 (0.9733 - 0.9792) |
| DMFR-4 | 5614 | 426 | 105 | 95 | 0.8023 (0.7723 - 0.8291) | 0.9834 (0.9803 - 0.9859) |
| Periodontal bone loss, moderate | device | 8774 | 410 | 40 | 119 | 0.9111 (0.8865 - 0.9308) | 0.9866 (0.9845 - 0.9885) |
| DMFR-1 | 6258 | 269 | 71 | 58 | 0.7912 (0.7527 - 0.8251) | 0.9908 (0.9886 - 0.9926) |
| DMFR-2 | 7101 | 291 | 33 | 63 | 0.8981 (0.8671 - 0.9226) | 0.9912 (0.9892 - 0.9928) |
| DMFR-3 | 7381 | 244 | 102 | 81 | 0.7052 (0.6634 - 0.7438) | 0.9891 (0.987 - 0.9909) |
| DMFR-4 | 5826 | 306 | 46 | 62 | 0.8693 (0.8369 - 0.8961) | 0.9895 (0.987 - 0.9914) |
| Periodontal bone loss, severe | device | 9124 | 169 | 13 | 37 | 0.9286 (0.8905 - 0.9541) | 0.996 (0.9947 - 0.9969) |
| DMFR-1 | 6492 | 124 | 20 | 20 | 0.8611 (0.807 - 0.9019) | 0.9969 (0.9956 - 0.9979) |
| DMFR-2 | 7340 | 100 | 17 | 31 | 0.8547 (0.7931 - 0.9003) | 0.9958 (0.9944 - 0.9969) |
| DMFR-3 | 7646 | 99 | 35 | 28 | 0.7388 (0.6721 - 0.7961) | 0.9964 (0.995 - 0.9973) |
| DMFR-4 | 6044 | 125 | 26 | 45 | 0.8278 (0.7716 - 0.8725) | 0.9926 (0.9906 - 0.9942) |
| Pontic | device | 9252 | 81 | 8 | 2 | 0.9101 (0.8474 - 0.9486) | 0.9998 (0.9993 - 0.9999) |
| DMFR-1 | 6592 | 55 | 6 | 3 | 0.9016 (0.8209 - 0.9483) | 0.9995 (0.9989 - 0.9998) |
| DMFR-2 | 7419 | 63 | 1 | 5 | 0.9844 (0.933 - 0.9965) | 0.9993 (0.9986 - 0.9997) |
| DMFR-3 | 7733 | 72 | 3 | 0 | 0.96 (0.9041 - 0.9839) | 1.0 (0.9997 - 1.0) |
| DMFR-4 | 6168 | 68 | 2 | 2 | 0.9714 (0.9173 - 0.9905) | 0.9997 (0.999 - 0.9999) |
| Post and core | device | 9092 | 171 | 57 | 23 | 0.75 (0.7001 - 0.7941) | 0.9975 (0.9965 - 0.9982) |
| DMFR-1 | 6440 | 133 | 48 | 35 | 0.7348 (0.6777 - 0.785) | 0.9946 (0.9929 - 0.9959) |
| DMFR-2 | 7252 | 179 | 9 | 48 | 0.9521 (0.9195 - 0.9719) | 0.9934 (0.9917 - 0.9948) |
| DMFR-3 | 7609 | 144 | 35 | 20 | 0.8045 (0.7513 - 0.8485) | 0.9974 (0.9962 - 0.9982) |
| DMFR-4 | 6089 | 123 | 25 | 3 | 0.8311 (0.7746 - 0.8757) | 0.9995 (0.9988 - 0.9998) |
| Roots N=1 | device | 4400 | 4694 | 199 | 50 | 0.9593 (0.9544 - 0.9637) | 0.9888 (0.9859 - 0.9911) |
| DMFR-1 | 3129 | 3439 | 43 | 45 | 0.9877 (0.9842 - 0.9904) | 0.9858 (0.9819 - 0.9889) |
| DMFR-2 | 3472 | 3930 | 37 | 49 | 0.9907 (0.9878 - 0.9929) | 0.9861 (0.9824 - 0.989) |
| DMFR-3 | 3607 | 4075 | 54 | 72 | 0.9869 (0.9837 - 0.9895) | 0.9804 (0.9763 - 0.9838) |
| DMFR-4 | 3033 | 3116 | 74 | 17 | 0.9768 (0.972 - 0.9808) | 0.9944 (0.9917 - 0.9962) |
| Roots N=2 | device | 7787 | 1266 | 113 | 177 | 0.9181 (0.9051 - 0.9294) | 0.9778 (0.9749 - 0.9803) |
| DMFR-1 | 5623 | 953 | 32 | 48 | 0.9675 (0.9569 - 0.9756) | 0.9915 (0.9893 - 0.9933) |
| DMFR-2 | 6309 | 1079 | 50 | 50 | 0.9557 (0.9445 - 0.9647) | 0.9921 (0.9901 - 0.9938) |
| DMFR-3 | 6597 | 1097 | 55 | 59 | 0.9523 (0.9408 - 0.9616) | 0.9911 (0.989 - 0.9928) |
| DMFR-4 | 5286 | 855 | 45 | 54 | 0.95 (0.9366 - 0.9607) | 0.9899 (0.9874 - 0.9919) |
| Roots N=3 | device | 8328 | 803 | 30 | 182 | 0.964 (0.9518 - 0.9732) | 0.9786 (0.9759 - 0.981) |
| DMFR-1 | 6012 | 589 | 30 | 25 | 0.9515 (0.9353 - 0.9639) | 0.9959 (0.9943 - 0.997) |
| DMFR-2 | 6795 | 635 | 35 | 23 | 0.9478 (0.9317 - 0.9602) | 0.9966 (0.9953 - 0.9976) |
| DMFR-3 | 7065 | 686 | 29 | 28 | 0.9594 (0.9455 - 0.9699) | 0.9961 (0.9946 - 0.9971) |
| DMFR-4 | 5688 | 499 | 15 | 38 | 0.9708 (0.9559 - 0.9808) | 0.9934 (0.9914 - 0.9949) |
| Roots N=4 | device | 9334 | 0 | 9 | 0 | 0.0 (0.0 - 0.2311) | 1.0 (0.9997 - 1.0) |
| DMFR-1 | 6647 | 9 | 0 | 0 | 1.0 (0.7689 - 1.0) | 1.0 (0.9996 - 1.0) |
| DMFR-2 | 7478 | 7 | 1 | 2 | 0.875 (0.5889 - 0.9716) | 0.9997 (0.9992 - 0.9999) |
| DMFR-3 | 7802 | 4 | 2 | 0 | 0.6667 (0.347 - 0.8827) | 1.0 (0.9997 - 1.0) |
| DMFR-4 | 6236 | 4 | 0 | 0 | 1.0 (0.5965 - 1.0) | 1.0 (0.9996 - 1.0) |
| Short filling | device | 8873 | 289 | 125 | 56 | 0.6981 (0.6598 - 0.7338) | 0.9937 (0.9922 - 0.995) |
| DMFR-1 | 6291 | 315 | 25 | 25 | 0.9265 (0.8997 - 0.9465) | 0.996 (0.9945 - 0.9971) |
| DMFR-2 | 7053 | 319 | 28 | 88 | 0.9193 (0.8919 - 0.9402) | 0.9877 (0.9853 - 0.9896) |
| DMFR-3 | 7428 | 294 | 36 | 50 | 0.8909 (0.8594 - 0.916) | 0.9933 (0.9916 - 0.9947) |
| DMFR-4 | 5984 | 197 | 52 | 7 | 0.7912 (0.7458 - 0.8303) | 0.9988 (0.9978 - 0.9994) |
| Voids present in the root filling | device | 9027 | 203 | 74 | 39 | 0.7329 (0.687 - 0.7742) | 0.9957 (0.9944 - 0.9967) |
| DMFR-1 | 6391 | 207 | 24 | 34 | 0.8961 (0.8584 - 0.9247) | 0.9947 (0.993 - 0.996) |
| DMFR-2 | 7211 | 191 | 40 | 46 | 0.8268 (0.7822 - 0.8639) | 0.9937 (0.9919 - 0.995) |
| DMFR-3 | 7544 | 187 | 29 | 48 | 0.8657 (0.823 - 0.8994) | 0.9937 (0.992 - 0.995) |
| DMFR-4 | 6059 | 139 | 33 | 9 | 0.8081 (0.7541 - 0.8526) | 0.9985 (0.9975 - 0.9991) |

## Supplement 3 –Table shows the results of aided and unaided groups as percentages for true and false diagnosis.

|  |  |
| --- | --- |
|   | Artificial crown / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Artificial crown | Aided True | 1600 | 80,9 | 377 | 19,1 | 1977 | 100,0 |
| Unaided True | 1290 | 69,7 | 561 | 30,3 | 1851 | 100,0 |
| Aided False | 314 | 1,6 | 18829 | 98,4 | 19143 | 100,0 |
| Unaided False | 624 | 3,2 | 18645 | 96,8 | 19269 | 100,0 |
| Total | 3828 | 9,1 | 38412 | 90,9 | 42240 | 100,0 |
|   | Canals N=1 / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Canals N=1 | Aided True | 9826 | 96,4 | 371 | 3,6 | 10197 | 100,0 |
| Unaided True | 9699 | 94,9 | 525 | 5,1 | 10224 | 100,0 |
| Aided False | 472 | 4,3 | 10451 | 95,7 | 10923 | 100,0 |
| Unaided False | 599 | 5,5 | 10297 | 94,5 | 10896 | 100,0 |
| Total | 20596 | 48,8 | 21644 | 51,2 | 42240 | 100,0 |
|   | Canals N=2 / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Canals N=2 | Aided True | 2192 | 80,1 | 544 | 19,9 | 2736 | 100,0 |
| Unaided True | 2016 | 74,8 | 678 | 25,2 | 2694 | 100,0 |
| Aided False | 569 | 3,1 | 17815 | 96,9 | 18384 | 100,0 |
| Unaided False | 745 | 4,0 | 17681 | 96,0 | 18426 | 100,0 |
| Total | 5522 | 13,1 | 36718 | 86,9 | 42240 | 100,0 |
|   | n | % | n | % | n | % |
| Canals N=3 | Aided True | 2728 | 84,5 | 502 | 15,5 | 3230 | 100,0 |
| Unaided True | 2421 | 80,2 | 598 | 19,8 | 3019 | 100,0 |
| Aided False | 569 | 3,2 | 17321 | 96,8 | 17890 | 100,0 |
| Unaided False | 876 | 4,8 | 17225 | 95,2 | 18101 | 100,0 |
| Total | 6594 | 15,6 | 35646 | 84,4 | 42240 | 100,0 |
|   | Canals N=4 / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Canals N=4 | Aided True | 717 | 64,8 | 389 | 35,2 | 1106 | 100,0 |
| Unaided True | 724 | 56,2 | 564 | 43,8 | 1288 | 100,0 |
| Aided False | 257 | 1,3 | 19757 | 98,7 | 20014 | 100,0 |
| Unaided False | 250 | 1,3 | 19582 | 98,7 | 19832 | 100,0 |
| Total | 1948 | 4,6 | 40292 | 95,4 | 42240 | 100,0 |
|   | Canals N=5 / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Canals N=5 | Aided True | 0 | 0,0 | 4 | 100,0 | 4 | 100,0 |
| Unaided True | 0 | 0,0 | 18 | 100,0 | 18 | 100,0 |
| Aided False | 0 | 0,0 | 21116 | 100,0 | 21116 | 100,0 |
| Unaided False | 0 | 0,0 | 21102 | 100,0 | 21102 | 100,0 |
| Total | 0 | 0,0 | 42240 | 100,0 | 42240 | 100,0 |
|   | Caries signs / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Caries signs | Aided True | 750 | 21,1 | 2803 | 78,9 | 3553 | 100,0 |
| Unaided True | 741 | 15,4 | 4065 | 84,6 | 4806 | 100,0 |
| Aided False | 369 | 2,1 | 17198 | 97,9 | 17567 | 100,0 |
| Unaided False | 378 | 2,3 | 15936 | 97,7 | 16314 | 100,0 |
| Total | 2238 | 5,3 | 40002 | 94,7 | 42240 | 100,0 |
|   | Crown defect over 50pct / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Crown defect over 50pct | Aided True | 519 | 72,0 | 202 | 28,0 | 721 | 100,0 |
| Unaided True | 451 | 53,8 | 388 | 46,2 | 839 | 100,0 |
| Aided False | 54 | ,3 | 20345 | 99,7 | 20399 | 100,0 |
| Unaided False | 122 | ,6 | 20159 | 99,4 | 20281 | 100,0 |
| Total | 1146 | 2,7 | 41094 | 97,3 | 42240 | 100,0 |
|   | Endodontically treated tooth / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Endodontically treated tooth | Aided True | 3790 | 96,2 | 151 | 3,8 | 3941 | 100,0 |
| Unaided True | 3681 | 92,9 | 282 | 7,1 | 3963 | 100,0 |
| Aided False | 98 | ,6 | 17081 | 99,4 | 17179 | 100,0 |
| Unaided False | 207 | 1,2 | 16950 | 98,8 | 17157 | 100,0 |
| Total | 7776 | 18,4 | 34464 | 81,6 | 42240 | 100,0 |
|   | Filling / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Filling | Aided True | 6049 | 89,5 | 707 | 10,5 | 6756 | 100,0 |
| Unaided True | 5060 | 80,2 | 1251 | 19,8 | 6311 | 100,0 |
| Aided False | 458 | 3,2 | 13906 | 96,8 | 14364 | 100,0 |
| Unaided False | 1447 | 9,8 | 13362 | 90,2 | 14809 | 100,0 |
| Total | 13014 | 30,8 | 29226 | 69,2 | 42240 | 100,0 |
|   | Impaction / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Impaction | Aided True | 88 | 83,8 | 17 | 16,2 | 105 | 100,0 |
| Unaided True | 44 | 74,6 | 15 | 25,4 | 59 | 100,0 |
| Aided False | 13 | ,1 | 21002 | 99,9 | 21015 | 100,0 |
| Unaided False | 57 | ,3 | 21004 | 99,7 | 21061 | 100,0 |
| Total | 202 | ,5 | 42038 | 99,5 | 42240 | 100,0 |
|   | Implant / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Implant | Aided True | 330 | 99,7 | 1 | ,3 | 331 | 100,0 |
| Unaided True | 313 | 97,2 | 9 | 2,8 | 322 | 100,0 |
| Aided False | 0 | 0,0 | 20789 | 100,0 | 20789 | 100,0 |
| Unaided False | 17 | ,1 | 20781 | 99,9 | 20798 | 100,0 |
| Total | 660 | 1,6 | 41580 | 98,4 | 42240 | 100,0 |
|   | Missed canal / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Missed canal | Aided True | 452 | 62,3 | 274 | 37,7 | 726 | 100,0 |
| Unaided True | 423 | 27,6 | 1108 | 72,4 | 1531 | 100,0 |
| Aided False | 98 | ,5 | 20296 | 99,5 | 20394 | 100,0 |
| Unaided False | 127 | ,6 | 19462 | 99,4 | 19589 | 100,0 |
| Total | 1100 | 2,6 | 41140 | 97,4 | 42240 | 100,0 |
|   | Missing / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Missing / aided | Aided True | 2039 | 64,5 | 1121 | 35,5 | 3160 | 100,0 |
| Unaided True | 2041 | 63,0 | 1200 | 37,0 | 3241 | 100,0 |
| Aided False | 240 | 1,3 | 17720 | 98,7 | 17960 | 100,0 |
| Unaided False | 237 | 1,3 | 17641 | 98,7 | 17878 | 100,0 |
| 12,0 | 1 | 100,0 | 0 | 0,0 | 1 | 100,0 |
| Total | 4558 | 10,8 | 37682 | 89,2 | 42240 | 100,0 |
|   | Overfilling / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Overfilling | Aided True | 598 | 79,4 | 155 | 20,6 | 753 | 100,0 |
| Unaided True | 465 | 74,2 | 162 | 25,8 | 627 | 100,0 |
| Aided False | 157 | ,8 | 20210 | 99,2 | 20367 | 100,0 |
| Unaided False | 290 | 1,4 | 20203 | 98,6 | 20493 | 100,0 |
| Total | 1510 | 3,6 | 40730 | 96,4 | 42240 | 100,0 |
|   | PDL widening along root / gt |
| True | False | Total |
| n | % | n | % | n | % |
| PDL widening along root | Aided True | 509 | 55,8 | 403 | 44,2 | 912 | 100,0 |
| Unaided True | 190 | 25,6 | 551 | 74,4 | 741 | 100,0 |
| Aided False | 174 | ,9 | 20034 | 99,1 | 20208 | 100,0 |
| Unaided False | 493 | 2,4 | 19886 | 97,6 | 20379 | 100,0 |
| Total | 1366 | 3,2 | 40874 | 96,8 | 42240 | 100,0 |
|   | Periapical lesion / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Periapical lesion | Aided True | 2278 | 67,2 | 1111 | 32,8 | 3389 | 100,0 |
| Unaided True | 1874 | 65,2 | 999 | 34,8 | 2873 | 100,0 |
| Aided False | 467 | 2,6 | 17264 | 97,4 | 17731 | 100,0 |
| Unaided False | 871 | 4,8 | 17376 | 95,2 | 18247 | 100,0 |
| Total | 5490 | 13,0 | 36750 | 87,0 | 42240 | 100,0 |
|   | Periapical lesion, PDL widening / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Periapical lesion, PDL widening | Aided True | 740 | 36,2 | 1302 | 63,8 | 2042 | 100,0 |
| Unaided True | 461 | 33,6 | 913 | 66,4 | 1374 | 100,0 |
| Aided False | 692 | 3,6 | 18386 | 96,4 | 19078 | 100,0 |
| Unaided False | 971 | 4,9 | 18775 | 95,1 | 19746 | 100,0 |
| Total | 2864 | 6,8 | 39376 | 93,2 | 42240 | 100,0 |
|   | Periapical lesion, poorly circumscribed radiolucency / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Periapical lesion, poorly circumscribed radiolucency | Aided True | 42 | 16,2 | 217 | 83,8 | 259 | 100,0 |
| Unaided True | 19 | 4,5 | 399 | 95,5 | 418 | 100,0 |
| Aided False | 50 | ,2 | 20811 | 99,8 | 20861 | 100,0 |
| Unaided False | 73 | ,4 | 20629 | 99,6 | 20702 | 100,0 |
| Total | 184 | ,4 | 42056 | 99,6 | 42240 | 100,0 |
|   | Periapical lesion, radiopacity / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Periapical lesion, radiopacity | Aided True | 0 | 0,0 | 70 | 100,0 | 70 | 100,0 |
| Unaided True | 0 | 0,0 | 82 | 100,0 | 82 | 100,0 |
| Aided False | 0 | 0,0 | 21050 | 100,0 | 21050 | 100,0 |
| Unaided False | 0 | 0,0 | 21006 | 100,0 | 21006 | 100,0 |
| Total | 0 | 0,0 | 42208 | 100,0 | 42208 | 100,0 |
|   | Periapical lesion, well circumscribed radiolucency / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Periapical lesion, well circumscribed radiolucency | Aided True | 893 | 83,8 | 172 | 16,2 | 1065 | 100,0 |
| Unaided True | 756 | 67,5 | 364 | 32,5 | 1120 | 100,0 |
| Aided False | 359 | 1,8 | 19696 | 98,2 | 20055 | 100,0 |
| Unaided False | 496 | 2,5 | 19504 | 97,5 | 20000 | 100,0 |
| Total | 2504 | 5,9 | 39736 | 94,1 | 42240 | 100,0 |
|   | Periodontal bone loss / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Periodontal bone loss | Aided True | 2535 | 43,3 | 3314 | 56,7 | 5849 | 100,0 |
| Unaided True | 1577 | 35,3 | 2894 | 64,7 | 4471 | 100,0 |
| Aided False | 973 | 6,4 | 14298 | 93,6 | 15271 | 100,0 |
| Unaided False | 1927 | 11,6 | 14690 | 88,4 | 16617 | 100,0 |
| Total | 7012 | 16,6 | 35196 | 83,4 | 42208 | 100,0 |
|   | Periodontal bone loss, mild / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Periodontal bone loss, mild | Aided True | 886 | 26,8 | 2425 | 73,2 | 3311 | 100,0 |
| Unaided True | 432 | 15,5 | 2347 | 84,5 | 2779 | 100,0 |
| Aided False | 951 | 5,3 | 16858 | 94,7 | 17809 | 100,0 |
| Unaided False | 1401 | 7,7 | 16908 | 92,3 | 18309 | 100,0 |
| Total | 3670 | 8,7 | 38538 | 91,3 | 42208 | 100,0 |
|   | Periodontal bone loss, moderate / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Periodontal bone loss, moderate | Aided True | 555 | 27,2 | 1486 | 72,8 | 2041 | 100,0 |
| Unaided True | 273 | 19,3 | 1143 | 80,7 | 1416 | 100,0 |
| Aided False | 719 | 3,8 | 18360 | 96,2 | 19079 | 100,0 |
| Unaided False | 1001 | 5,1 | 18671 | 94,9 | 19672 | 100,0 |
| Total | 2548 | 6,0 | 39660 | 94,0 | 42208 | 100,0 |
|   | Periodontal bone loss, severe / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Periodontal bone loss, severe | Aided True | 71 | 32,0 | 151 | 68,0 | 222 | 100,0 |
| Unaided True | 56 | 17,6 | 263 | 82,4 | 319 | 100,0 |
| Aided False | 129 | ,6 | 20769 | 99,4 | 20898 | 100,0 |
| Unaided False | 144 | ,7 | 20657 | 99,3 | 20801 | 100,0 |
| Total | 400 | ,9 | 41840 | 99,1 | 42240 | 100,0 |
|   | Pontic / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Pontic | Aided True | 256 | 91,8 | 23 | 8,2 | 279 | 100,0 |
| Unaided True | 240 | 78,9 | 64 | 21,1 | 304 | 100,0 |
| Aided False | 10 | ,0 | 20830 | 100,0 | 20840 | 100,0 |
| Unaided False | 26 | ,1 | 20790 | 99,9 | 20816 | 100,0 |
| Total | 532 | 1,3 | 41707 | 98,7 | 42239 | 100,0 |
|   | Post and core / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Post and core | Aided True | 935 | 75,3 | 306 | 24,7 | 1241 | 100,0 |
| Unaided True | 843 | 59,8 | 566 | 40,2 | 1409 | 100,0 |
| Aided False | 254 | 1,3 | 19625 | 98,7 | 19879 | 100,0 |
| Unaided False | 345 | 1,8 | 19334 | 98,2 | 19679 | 100,0 |
| Total | 2377 | 5,6 | 39831 | 94,4 | 42208 | 100,0 |
|   | Roots N=1 / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Roots N=1 | Aided True | 11339 | 97,8 | 250 | 2,2 | 11589 | 100,0 |
| Unaided True | 11412 | 96,4 | 423 | 3,6 | 11835 | 100,0 |
| Aided False | 526 | 5,5 | 9004 | 94,5 | 9530 | 100,0 |
| Unaided False | 453 | 4,9 | 8832 | 95,1 | 9285 | 100,0 |
| Total | 23730 | 56,2 | 18509 | 43,8 | 42239 | 100,0 |
|   | Roots N=2 / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Roots N=2 | Aided True | 2725 | 84,9 | 484 | 15,1 | 3209 | 100,0 |
| Unaided True | 2611 | 84,1 | 493 | 15,9 | 3104 | 100,0 |
| Aided False | 434 | 2,4 | 17477 | 97,6 | 17911 | 100,0 |
| Unaided False | 548 | 3,0 | 17468 | 97,0 | 18016 | 100,0 |
| Total | 6318 | 15,0 | 35922 | 85,0 | 42240 | 100,0 |
|   | Roots N=3 / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Roots N=3 | Aided True | 1879 | 77,4 | 548 | 22,6 | 2427 | 100,0 |
| Unaided True | 1804 | 81,4 | 413 | 18,6 | 2217 | 100,0 |
| Aided False | 125 | ,7 | 18568 | 99,3 | 18693 | 100,0 |
| Unaided False | 200 | 1,1 | 18703 | 98,9 | 18903 | 100,0 |
| Total | 4008 | 9,5 | 38232 | 90,5 | 42240 | 100,0 |
|   | Roots N=4 / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Roots N=4 | Aided True | 8 | 42,1 | 11 | 57,9 | 19 | 100,0 |
| Unaided True | 31 | 50,0 | 31 | 50,0 | 62 | 100,0 |
| Aided False | 36 | ,2 | 21065 | 99,8 | 21101 | 100,0 |
| Unaided False | 13 | ,1 | 21013 | 99,9 | 21026 | 100,0 |
| Total | 88 | ,2 | 42120 | 99,8 | 42208 | 100,0 |
|   | Short filling / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Short filling | Aided True | 1642 | 84,7 | 296 | 15,3 | 1938 | 100,0 |
| Unaided True | 1267 | 78,3 | 352 | 21,7 | 1619 | 100,0 |
| Aided False | 378 | 2,0 | 18804 | 98,0 | 19182 | 100,0 |
| Unaided False | 753 | 3,9 | 18748 | 96,1 | 19501 | 100,0 |
| Total | 4040 | 9,6 | 38200 | 90,4 | 42240 | 100,0 |
|   | Voids present in the root filling / gt |
| True | False | Total |
| n | % | n | % | n | % |
| Voids present in the root filling | Aided True | 1239 | 78,5 | 339 | 21,5 | 1578 | 100,0 |
| Unaided True | 801 | 62,9 | 472 | 37,1 | 1273 | 100,0 |
| Aided False | 389 | 2,0 | 19153 | 98,0 | 19542 | 100,0 |
| Unaided False | 827 | 4,2 | 19020 | 95,8 | 19847 | 100,0 |
| Total | 3256 | 7,7 | 38984 | 92,3 | 42240 | 100,0 |