

| Knee feature | Knee side | Marathon runners (n=142 knees) | | | | | | Non-marathon runners (n=22 knees) | | | | | |
|-----------------------------------|-----------|--------------------------------|--------|---------------|-------|---------|----------------|-----------------------------------|--------|---------------|-------|---------|---------|
| | | Lesioned Knee | | Post-M Lesion | | | Change | Lesioned Knee | | Post-M Lesion | | | Change |
| | | Pre-M | Post-M | New | Worse | Improve | p-value | Pre-M | Post-M | New | Worse | Improve | p-value |
| Meniscal tears in knees | | 51 | 52 | 1 | 0 | 0 | | 6 | 6 | 0 | 0 | 0 | |
| AH | Medial | 5 | 5 | 0 | 0 | 0 | N/A | 1 | 1 | 0 | 0 | 0 | N/A |
| | Lateral | 3 | 3 | 0 | 0 | 0 | N/A | 0 | 0 | 0 | 0 | 0 | N/A |
| PH | Medial | 52 | 53 | 1 | 0 | 0 | > 0.999 | 6 | 6 | 0 | 0 | 0 | N/A |
| | Lateral | 3 | 3 | 0 | 0 | 0 | N/A | 0 | 0 | 0 | 0 | 0 | N/A |
| Meniscal signal in knees | | 23 | 23 | 0 | 0 | 0 | | 5 | 5 | 0 | 0 | 0 | |
| AH | Medial | 0 | 0 | 0 | 0 | 0 | N/A | 0 | 0 | 0 | 0 | 0 | N/A |
| | Lateral | 3 | 3 | 0 | 0 | 0 | N/A | 0 | 0 | 0 | 0 | 0 | N/A |
| PH | Medial | 19 | 19 | 0 | 0 | 0 | N/A | 5 | 5 | 0 | 0 | 0 | N/A |
| | Lateral | 4 | 4 | 0 | 0 | 0 | N/A | 0 | 0 | 0 | 0 | 0 | N/A |
| Cartilage lesions in knees | | 92 | 95 | 6 | 14 | 2 | | 15 | 15 | 0 | 3 | 0 | |
| Patella | Medial | 57 | 61 | 4 | 2 | 1 | 0.078 | 11 | 11 | 0 | 3 | 0 | 0.250 |
| | Lateral | 41 | 48 | 7 | 5 | 0 | 0.0005* | 8 | 8 | 0 | 0 | 0 | N/A |
| Trochlea | Medial | 4 | 5 | 1 | 0 | 0 | > 0.999 | 0 | 0 | 0 | 0 | 0 | N/A |
| | Central | 11 | 11 | 0 | 0 | 0 | N/A | 1 | 1 | 0 | 0 | 0 | N/A |
| | Lateral | 5 | 7 | 2 | 0 | 0 | 0.500 | 0 | 0 | 0 | 0 | 0 | N/A |
| Femur | Medial | 23 | 23 | 0 | 0 | 1 | > 0.999 | 5 | 5 | 0 | 1 | 0 | > 0.999 |
| | Lateral | 13 | 13 | 0 | 1 | 0 | > 0.999 | 3 | 3 | 0 | 0 | 0 | N/A |
| Tibia | Medial | 6 | 7 | 1 | 0 | 0 | > 0.999 | 2 | 2 | 0 | 0 | 0 | N/A |
| | Lateral | 8 | 10 | 2 | 0 | 0 | 0.500 | 0 | 0 | 0 | 0 | 0 | N/A |
| BME in knees | | 58 | 60 | 8 | 15 | 16 | | 9 | 8 | 2 | 0 | 3 | |
| Patella | Medial | 20 | 24 | 5 | 0 | 1 | 0.094 | 4 | 5 | 1 | 0 | 1 | > 0.999 |
| | Lateral | 21 | 26 | 5 | 1 | 1 | 0.469 | 3 | 4 | 1 | 0 | 0 | > 0.999 |
| Trochlea | Medial | 3 | 7 | 4 | 1 | 0 | 0.063 | 0 | 1 | 1 | 0 | 0 | > 0.999 |
| | Central | 5 | 6 | 1 | 0 | 0 | > 0.999 | 0 | 0 | 0 | 0 | 0 | N/A |
| | Lateral | 6 | 7 | 1 | 1 | 0 | 0.500 | 1 | 1 | 0 | 0 | 0 | N/A |
| Femur | Medial | 18 | 11 | 1 | 0 | 9 | 0.082 | 3 | 2 | 0 | 0 | 1 | > 0.999 |
| | Lateral | 6 | 6 | 2 | 0 | 2 | > 0.999 | 2 | 2 | 0 | 0 | 1 | > 0.999 |
| Tibia | Medial | 15 | 7 | 1 | 1 | 10 | 0.011* | 2 | 2 | 0 | 0 | 0 | N/A |
| | Lateral | 8 | 10 | 2 | 0 | 0 | 0.500 | 1 | 1 | 0 | 0 | 0 | N/A |
| BC in knees | | 30 | 32 | 1 | 3 | 1 | | 4 | 5 | 1 | 0 | 1 | |
| Patella | Medial | 7 | 8 | 1 | 0 | 0 | > 0.999 | 3 | 3 | 0 | 0 | 1 | > 0.999 |
| | Lateral | 8 | 9 | 1 | 0 | 1 | > 0.999 | 2 | 2 | 0 | 0 | 0 | N/A |
| Trochlea | Medial | 3 | 3 | 0 | 0 | 0 | > 0.999 | 0 | 0 | 0 | 0 | 0 | N/A |
| | Central | 3 | 3 | 0 | 0 | 0 | N/A | 0 | 0 | 0 | 0 | 0 | N/A |
| | Lateral | 3 | 4 | 1 | 0 | 0 | > 0.999 | 0 | 0 | 0 | 0 | 0 | N/A |
| Femur | Medial | 3 | 4 | 1 | 0 | 0 | > 0.999 | 1 | 1 | 0 | 0 | 0 | N/A |
| | Lateral | 3 | 3 | 0 | 0 | 0 | N/A | 0 | 0 | 0 | 0 | 0 | N/A |
| Tibia | Medial | 4 | 5 | 1 | 0 | 0 | > 0.999 | 1 | 1 | 0 | 0 | 0 | N/A |

| | | | | | | | | | | | | | |
|-------------------------------------|---------|----|----|----|---|---|--------------------|----|----|---|---|---|--------|
| | Lateral | 4 | 5 | 1 | 0 | 0 | > 0.999 | 0 | 0 | 0 | 0 | 0 | N/A |
| Tendons lesions in knees | | 60 | 65 | 6 | 4 | 1 | | 5 | 7 | 2 | 0 | 0 | |
| Patellar | | 31 | 34 | 3 | 0 | 1 | 0.500 | 5 | 7 | 2 | 0 | 0 | 0.500 |
| Quadriceps | | 21 | 21 | 0 | 0 | 0 | N/A | 1 | 1 | 0 | 0 | 0 | N/A |
| Semimembranosus | | 14 | 20 | 6 | 1 | 0 | 0.016* | 3 | 3 | 0 | 0 | 0 | N/A |
| Sartorius | | 1 | 2 | 1 | 0 | 0 | > 0.999 | 1 | 1 | 0 | 0 | 0 | N/A |
| Gracilis | | 5 | 7 | 2 | 0 | 1 | > 0.999 | 2 | 2 | 0 | 0 | 0 | N/A |
| Ligamentous lesions in knees | | 59 | 58 | 1 | 1 | 2 | | 7 | 7 | 0 | 0 | 0 | |
| ACL | | 55 | 55 | 0 | 0 | 0 | N/A | 6 | 6 | 0 | 0 | 0 | N/A |
| PCL | | 0 | 0 | 0 | 0 | 0 | N/A | 0 | 0 | 0 | 0 | 0 | N/A |
| MCL | | 4 | 2 | 0 | 0 | 2 | 0.500 | 2 | 2 | 0 | 0 | 0 | N/A |
| LCL | | 2 | 4 | 2 | 0 | 0 | 0.500 | 0 | 0 | 0 | 0 | 0 | N/A |
| ITBFS in knees | | 3 | 18 | 15 | 0 | 0 | <0.0001* | 1 | 1 | 1 | 0 | 1 | >0.999 |
| Joint effusion in knees | | 74 | 74 | 0 | 0 | 0 | N/A | 11 | 11 | 0 | 0 | 0 | N/A |
| Prepatellar bursitis in knees | | 35 | 42 | 7 | 0 | 0 | 0.016* | 6 | 7 | 1 | 0 | 0 | >0.999 |
| Pes anserine bursitis knees | | 11 | 14 | 4 | 0 | 1 | 0.375 | 0 | 0 | 0 | 0 | 0 | N/A |
| Hoffa's synovitis in knees | | 30 | 30 | 0 | 0 | 0 | N/A | 8 | 8 | 0 | 0 | 0 | N/A |
| Baker's cyst in knees | | 48 | 53 | 5 | 0 | 0 | 0.0625 | 9 | 9 | 0 | 0 | 0 | N/A |
| Other ganglion cysts in knees | | 32 | 33 | 2 | 0 | 1 | >0.999 | 2 | 2 | 0 | 0 | 0 | N/A |
| PMC lesions in knees | | 15 | 16 | 2 | 0 | 1 | >0.999 | 2 | 2 | 0 | 0 | 0 | N/A |
| PLC lesions in knees | | 0 | 0 | 0 | 0 | 0 | N/A | 0 | 0 | 0 | 0 | 0 | N/A |

Table 1: Number of knees lesioned in different structures before and after the marathon/training, in marathon runners (142 knees) and non-marathon runners (22 knees) - and number of post-marathon lesions by type of change (new, worsened, improved). Comparisons were done between the number of knees with lesions before and after the marathon. The knees for which the presence of a lesion/signal hyperintensity was demonstrated were counted, irrespective of the severity of lesions. All abnormalities were recorded including Grade 1 abnormalities (all grades different from 0 were defined as 'lesions'). Pre-M, pre-marathon; Post-M, post-marathon; AH, anterior horn of the meniscus; PH, posterior horn of the meniscus; BME, subchondral bone marrow oedema; BC, subchondral bone cyst; ACL, anterior cruciate ligament; PCL, posterior cruciate ligament; MCL, medial collateral ligament; PLC, lateral collateral ligament; ITBFS, iliotibial band friction

syndrome; PMC, postero-medial corner; PLC, postero-lateral corner; *p-values<0.05 indicate significant changes in the knees between the pre- and post-marathon time points; The number of lesions in subjects, in knees and in all sides of the structures/total lesions (medial/central/lateral) were calculated. N/A: Not Applicable.