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| **Supplementary file 7**Short descriptions of each inciting event grouped by player action category. |
| *ID* | ***Change of direction*** |
| *C1* | Goalkeeper changing direction to block a shot on goal.The player pushes off the ground to move body forward and contralateral to the injured side to save the ball which is at hip height. This results in a hip abduction, extension, and external rotation movement of the injured leg (defined injury time), followed by a change of movement to hip flexion and hip adduction. |
| *C2* | Midfielder changing direction while chasing opponent.The player is in high running speed as he changes direction contralateral to injured side attempting a shoulder tackle. This results in hip abduction and extension of the injured leg after the foot hits the ground (defined injury time), followed by a change of movement to hip flexion and hip adduction. |
| *C3* | Defender changing direction as he attempts to regain balance after shoulder tackle.The player performs a shoulder tackle at high running speed and changes direction as he attempts to regain balance. The injured leg is planted on the ground. Following this, the body moves forward while the foot remains on the ground resulting in large hip extension, abduction and external rotation (defined injury time), followed by a change of movement to hip flexion and hip adduction. |
| *C4* | Midfielder accelerating after changing direction. The player reaches for the ball with the uninjured leg (potential injury time) and loses control of the ball. He then changes direction towards the injured side and pushes off with injured leg to accelerate towards the ball, resulting in a hip extension and abduction (defined injury time). This is followed by a change of movement to hip flexion and hip adduction. |
| *C5* | Goalkeeper turning to chase ball.The ball is headed over the player, who then turns app 180 deg. to chase the ball. The player performs an upper body rotation followed by a push off with the injured leg in a hip abduction, extension and external rotation movement (defined injury time). This is followed by a change of movement to hip flexion and hip adduction. |
| *C6* | Defender sliding on the grass while attempting to change direction.The player makes a fast approach towards opponent and has to change direction towards the injured side. As he attempts to push off with the uninjured leg, it slides on the ground and the injured leg gets stuck on the ground as the body is moving forward, resulting in a hip abduction and extension of the injured leg with the hip externally rotated (defined injury time). |
| ***Kicking*** |
| *K1* | Defender passing to goalkeeper. The player is in high speed and passes ball back to goalkeeper with the injured leg while screening opponent. As the ball is behind the stance leg there is a large active hip extension and abduction movement of the injured leg while the hip is externally rotated (defined injury time), followed by an active hip flexion with hip externally rotated. |
| *K2* | Goalkeeper performing goal kick.The player attempts a long goal kick with the injured leg. There is a change from an active hip extension to active hip flexion with the hip in minor external rotation and abduction (potential injury time). The active hip flexion with the hip in minor abduction continues to ball impact (potential injury time).  |
| *K3* | Forward performing half volley shot at goal.The player attempts a shot on goal around a defender after taking down the ball inside the box. The player rotates on uninjured leg resulting in a large hip abduction and hip extension followed by a fast hip flexion and adduction movement with the injured leg (defined injury time). |
| *K4* | Midfielder performing penalty kick.The player takes a penalty with the injured leg with a hard kick. There is a change from active hip extension to active hip flexion possibly with minor external rotation and abduction (defined injury time) prior to ball impact, which appear to be an instep kick. After scoring the player kick the ball again hard into the empty net (potential exacerbation). |
| *K5* | Midfielder passing ball behind standing leg. The player takes down the ball, rolls it back with the injured leg, and passes it behind the contralateral leg resulting in a fast hip abduction and minor hip extension movement followed by a fast hip adduction movement (defined injury time). The player lands on the injured leg in adduction likely causing a fast contraction of the adductor longus at short length to assist in stabilizing the hip (potential injury time). |
| ***Reaching*** |
| *R1* | Defender reaching for ball to regain possession.The player attempts to dribble, but gets tackled and the ball bounces. The player reaches for the ball with the uninjured leg, while the injured leg is on the ground, resulting in a hip extension of the injured leg (defined injury time).  |
| *R2* | Midfielder reaching for ball twice.The player gets a pass in front of him and reaches for the ball with the uninjured leg resulting in a large hip extension of the injured leg which is on the ground (potential injury time). He touches the ball and then reaches for the ball in front of him now with the injured leg straight, and gets tackled from the uninjured side (defined injury time).  |
| *R3* | Midfielder reaching for ball after tackle. The player performs a shoulder tackle and then reaches for the ball with the uninjured leg to gain possession. The knee of the injured leg is on the ground as his body is moving forward, resulting in a hip abduction and external rotation movement (defined injury time). |
| *R4* | Midfielder reaching for ball to intercept pass. The player attempts to intercept a pass reaching for the ball with the uninjured leg while the injured leg is on the ground. This results in a hip extension and minor abduction of the injured leg while the hip is externally rotated (defined injury time). |
| ***Jumping*** |
| *J1* | Goalkeeper jumping to catch ball.The player is running towards the ball coming from a long pass, and jumps on uninjured leg to catch the ball resulting in a hip flexion movement of the injured leg from full hip extension and minor abduction (defined injury time).  |
| *J2* | Midfielder jumping over tackling opponent.The player is running with the ball, while opponent attempts a sliding tackle. The player reached for the ball with the uninjured leg, while the injured leg is stretched behind him (potential injury time), and then jumps on the uninjured leg resulting in a hip flexion and minor adduction movement of the injured leg from a large hip extension and minor abduction (defined injury time). |